DIGITAL VIDEO RECORDER

4Ch Real time / Triplex / Mux

Built In DVR

User's Manual VER1.0

4Channel Built in DVR

The most stable and reliable real built in Digital Video Multiplex Recorder

INSTALLATION & SAFEGUARDS

All the safety and operating instructions should be read before the unit is operated.

Environment Condition for Installation

1. To prevent electric shock or other hazard, do not expose units to rain, moisture, or dust.
2. Place this unit in a well-ventilated place and do not place heat-generating objects on this unit.
3. This unit should not be located in an area where it is likely to be subjected to mechanical shocks.

Before You Start

1. Ensure the power switch is in the OFF position prior to starting.
2. Do not attempt to open or remove the covers. That may expose you to dangerous voltage or other hazards.
3. Installation should be performed by qualified service personnel only.
4. This unit should be operated only from the type of power source indicated on the manufacturer's label and with the power supply included with the unit.

Notice

1. Before initial configuration or operation you must first set the TIME/DATE, followed by HDD clear. If you don't follow this steps first, that may cause non recording on the HDD or non saving setting value. Even though it is recorded, you cannot search recorded data.
2. When it comes to HDD capacity, you can use a big size of HDD.
3. When you set the record setup, you have to set the Record Configuration and also Schedule Setup. This unit records as per the Record type & Schedule setup. The default setting value for Schedule setup is Continuous mode.

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CHAP 1. Features & Package Contents

1-1. Features

Live Display

Real time display per camera
Auto Sequence
PIP (Picture in picture)
Digital Zoom of display
Simple playback mode
Simple PTZ camera control

Record

Variable Record resolution (For higher picture quality or higher recording speed)
Efficient Image Quality step in 5 steps
Schedule recording
Event Record by alarm and motion detection

Network

Monitoring and Search by using Remote Viewer via network

Playback

Search and playback by recorded data size and date/time

Various steps in forward playback speed (X2, X4, X8, X16, X32 fast playback. 1/16, 1/8 ,1/4, 1/2 slow playback)
Various steps in backward playback speed (X2, X4, X8, X16, X32 fast playback. 1/16, 1/8, 1/4, 1/2 slow playback)

Data backup

Simple backup using USB memory stick
Remote viewer backup in AVI, JPEG file
Supports bigger capacity of HDD

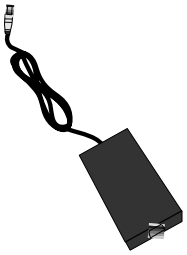
Others

Supports UNI-CODE
Supports SPOT Monitor
PAL/NTSC Auto detection

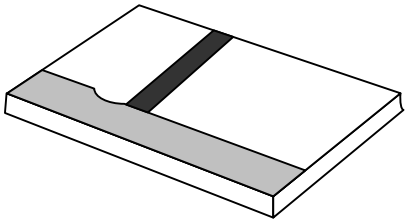
1-2. Package Contents

1. Built In DVR Main Unit

2. Power Cable



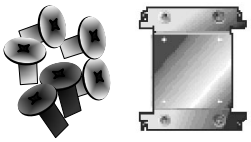
3. Power Adapter



4. User's Manual

5. Software CD

6. Connector cover bracket

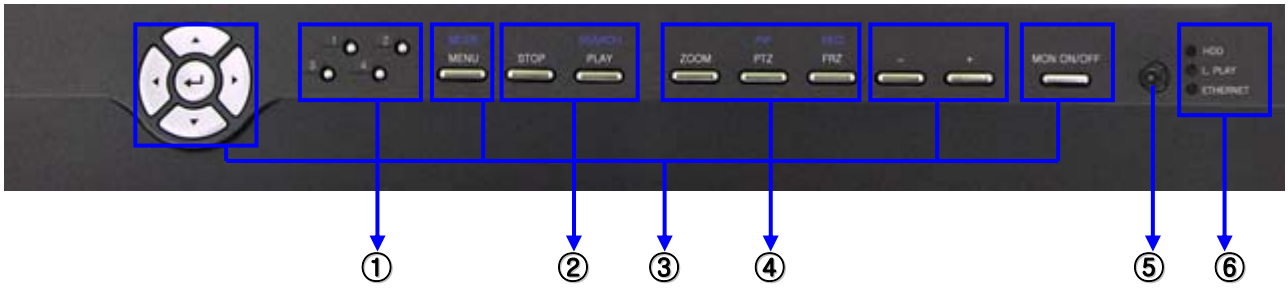


7. Bolts and Wall Mount Bracket

Package Contents	Description
1. DVR Main Unit	STAND-ALONE DIGITAL VIDEO RECORDER
2. Power Cable	AC power supply to adapters for 12 V DC power
3. Power Adapter	12 V DC power supply
4. User's Manual	User's Manual
5. Software CD	Remote Viewer Software & Back up player
6. Connector cover	Cable connector cover
7. Wall mount bracket / Bolts	Wall mount bracket
	For fixing Wall Mount bracket to SET (4ea)

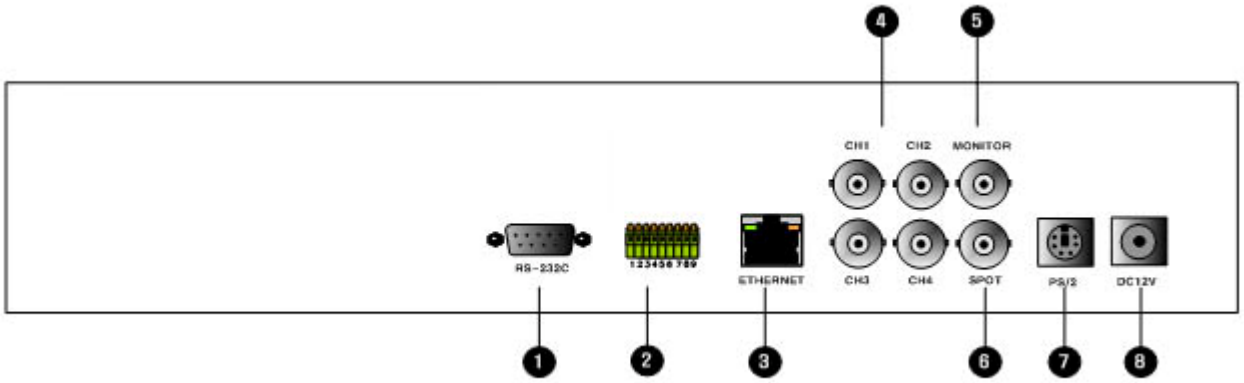
CHAP. 2 Function of Each Button

2-1 FRONT



Name	Function	
① Camera selection	Pressing this button will display a full screen image of that camera	
② Record / Playback	STOP	Playback stop and return to Schedule Record from Emergency Record.
	PLAY	Playback of recorded data on HDD
	SEARCH	Search recorded data on HDD (Press the button at 2 second)
③ SETUP	MENU	Set up for SYSTEM MENU or Use to exit the menu Press MENU button before powering off the unit
	ENTER	Selects each menu option
	NEXT	Move to next step
	▲▼◀▶	Navigate in the menu
	+ -	Reduce or increase the option value in the menu
	MON ON/OFF	Power off & on of LCD Monitor only
④ LIVE View Control	PTZ	On/Off for PAN/TILT/ZOOM control mode Press this button first to control PTZ camera connected to DVR unit via RS-485
	ZOOM	Zooming an image
	FRZ	Freezing an image
	MODE	Switch to split display (Press the button at 2 second) MODE button changes screen-division from (to) full screen to (from) 16-split screen.
	PIP	Display in PIP (Picture in Picture) mode
	SEQ	Displays full screen images in sequence (Press the button at 2 second)
⑤ IR	IR receiver	
⑥ LED Lamps	Shows status of operation	

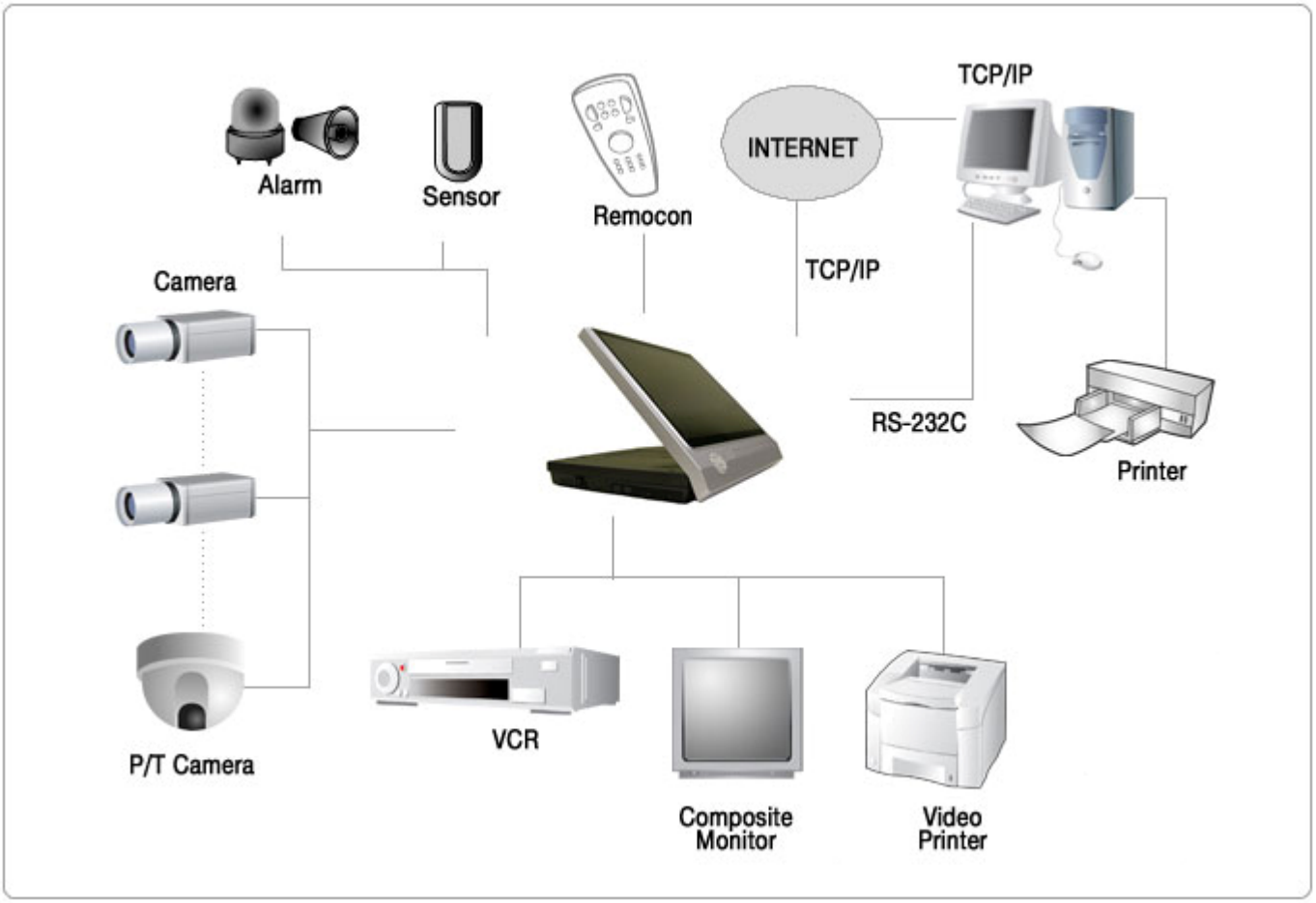
2-2. REAR



	Name	Function
1	RS-232C	Connection to external device as PC using RS-232C to control the DVR
2	RS 485	Connection with PTZ camera or other external device using RS 485 interface
	RELAY Output	Relay out terminal
	SENSOR Input	Sensor input terminal
3	ETHERNET	Connection to ETHERNET device
4	CAMERA Input	Connection with camera (NTSC / PAL)
5	MONITOR Output	Connection with Composite Monitor (NTSC / PAL)
6	SPOT Monitor Output	Connection with Composite Monitor (NTSC / PAL)
7	PS/2	Connection with PS/2 MOUSE
8	DC Power	DC over 12V adapter

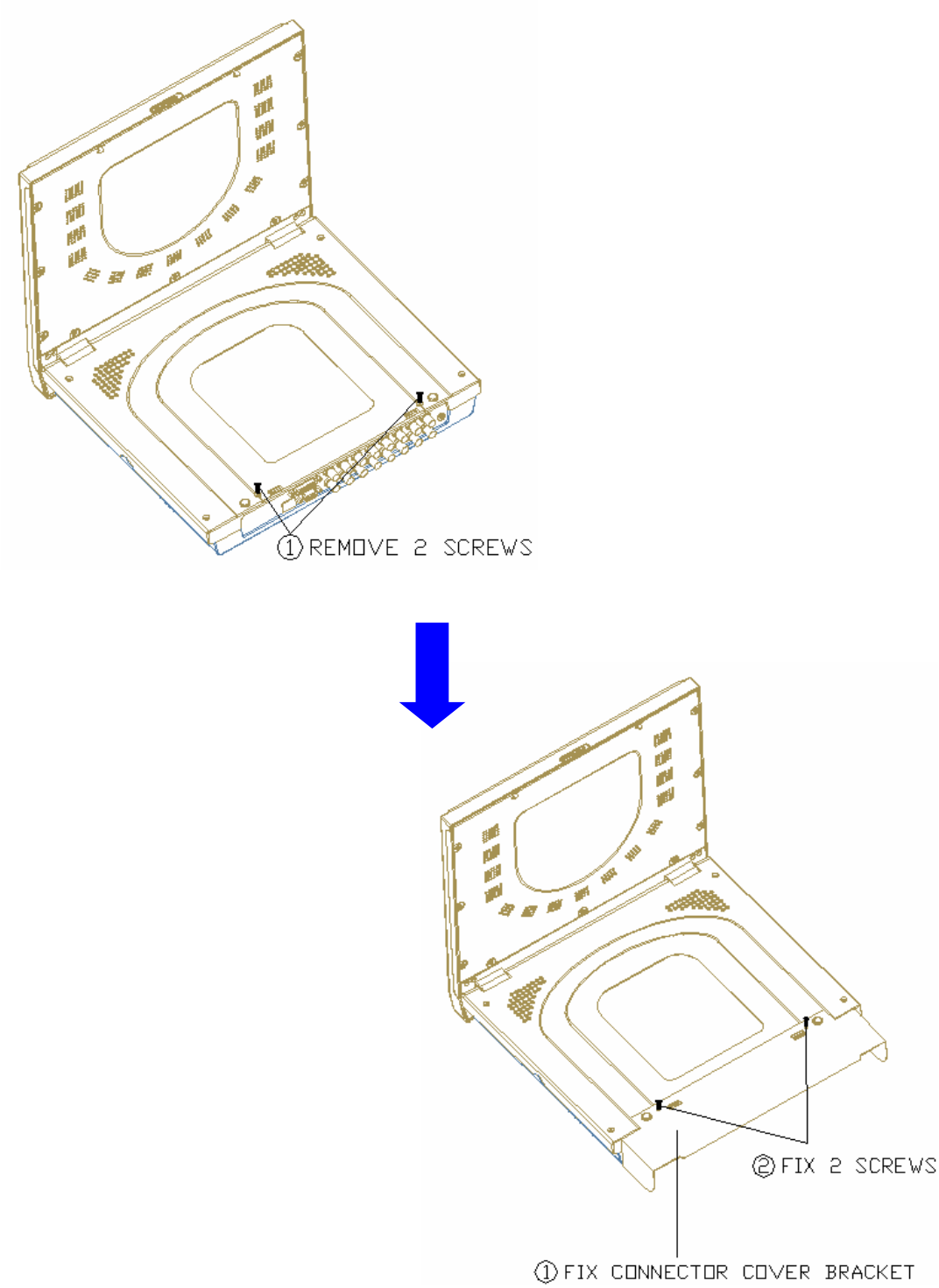
CHAP.3 Installation

3-1. Installation Configuration

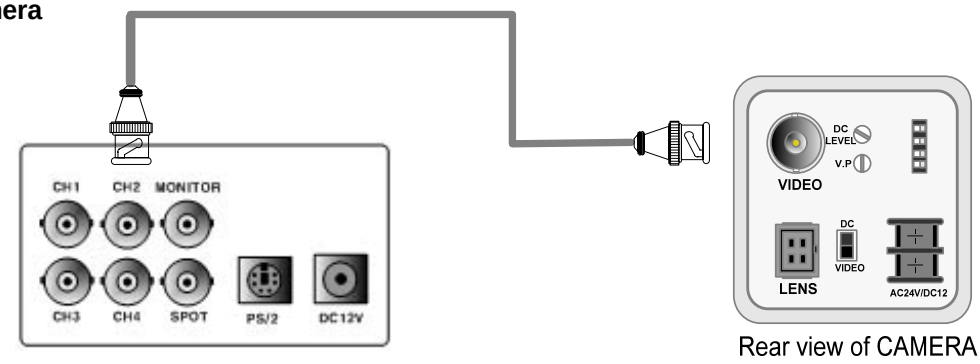


3-2. Detailed Installation

1) Connector cover bracket



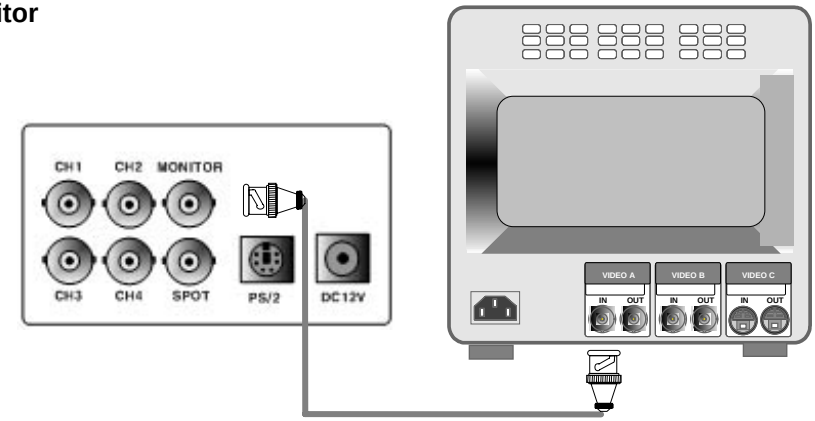
2) Camera



Rear view of CAMERA

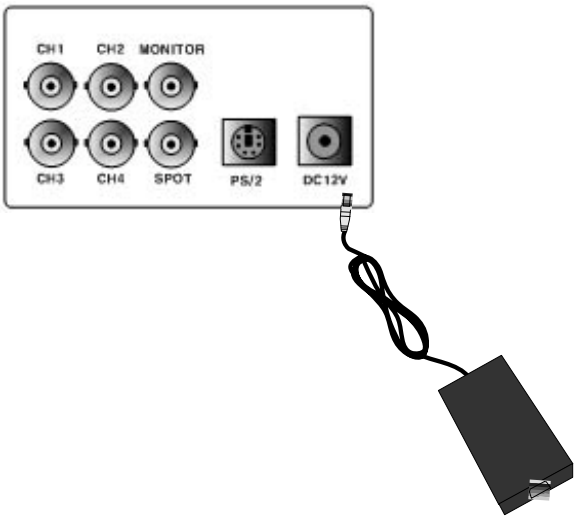
Connect cameras to the camera input on rear panel of Built in DVR.

3) Monitor



Connect the video output MONITOR to Video-In of Main monitor.

4) Power

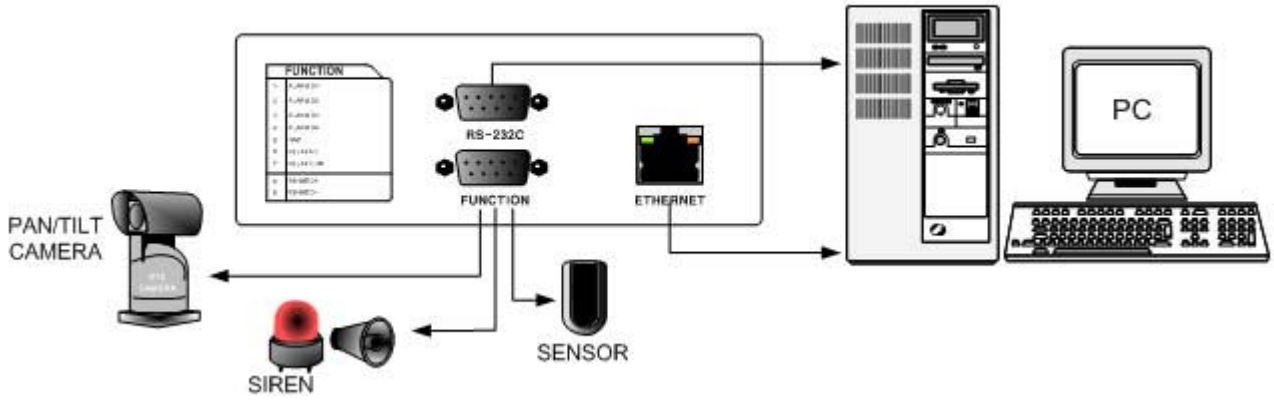


Connect one DC 12V, 6.6 A Adaptor to the back side of Power Jack.

Notice

To avoid accidental deletion of HDD data, please make sure to press MENU button before powering
powering off the unit. This takes the unit out of record mode for safe shutdown

5) Other External Device



RS-485 : Control external device like PTZ camera.
(Pin No.8 & No.9 at D-SUB).
RELAY Output : Relay Output (Pin No.6 & No.7 at D-SUB).
SENSOR Input : Sensor Input – Alarm Input (Pin No.1 ~ No.4 at D-SUB).
ETHERNET : Connection to LAN, WAN.

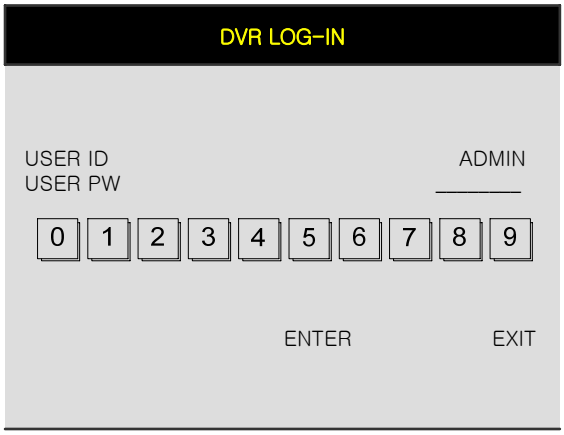
6) RS-232C ASCII-code

Following ASCII-Codes (Hexa-Code) are for programmers who want to control DVR unit via the RS232C Port using keyboard of PC. ASCII-Code is 1 Byte.

RECORD	'R'	DOWN	'J'	PTZ	'T'	CH1	'1'
STOP	'S'	LEFT	'H'	ZOOM	'Z'	CH2	'2'
PLAYBACK	'P'	RIGHT	'K'	FRZ	'F'	CH3	'3'
PAUSE	'A'	NEXT	'N'	MODE	'D'	CH4	'4'
SERCH	'E'	ENTER	0x0d	PIP	'I'		
MENU	'M'	-	'<'	SEQ	'Q'		
UP	'U'	+	'>'				

4-1. System Log-In

1)To enter into the setup menu, press [MENU] button
2)When you see the LOG-IN message shown as right hand side, press [↑], then move the curser with [→],[←]. Select the right number and press [ENTER] one by one.
(Max. 8 digits are available for password)
3)Press [↓] and [ENTER] to go into the system menu.



* MOUSE
1) Move a cursor to lower then click the 'Menu' Icon to log in.
2) Click the numbers to Input your password then click [ENTER].

If the password entered matches previously set password, you can log into 'MAIN MENU'. If an incorrect password is entered, you will see "PW IS NOT CORRECT" message on display. The factory default password is none. Just click [ENTER] for first time initial log in.

-Factory default password
ADMIN : ENTER

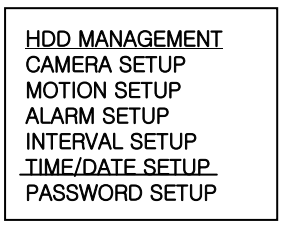
※ For security reasons, be sure to make note of your own password.

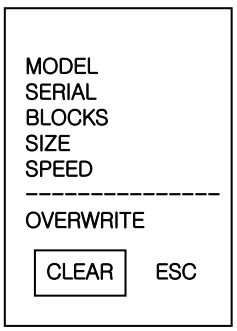
4-2. Factory Default

Before first operation, you must check out each channel is displaying properly and log in 'Main Menu' and set Time/Date and set HDD clear.

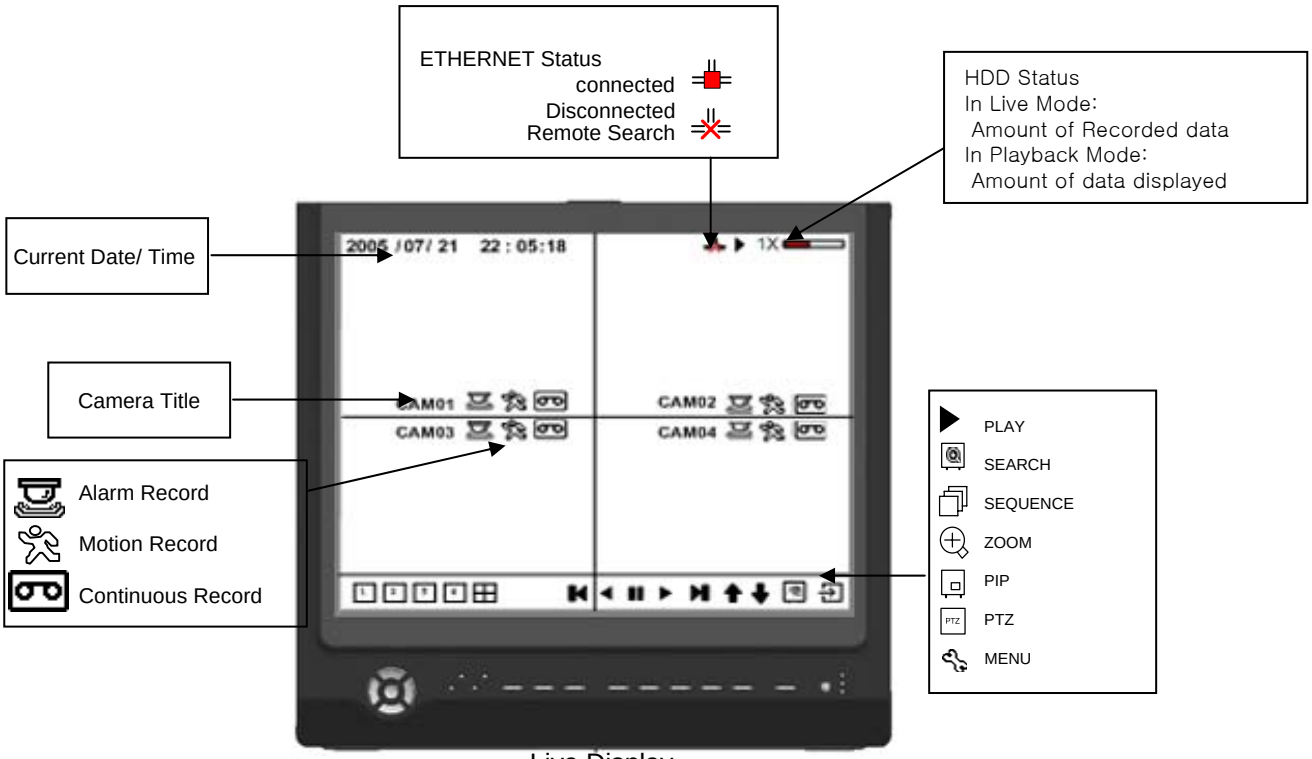
1. HDD CLEAR

[MENU]->[CONFIGURATION]->[HDD MANAGEMENT]

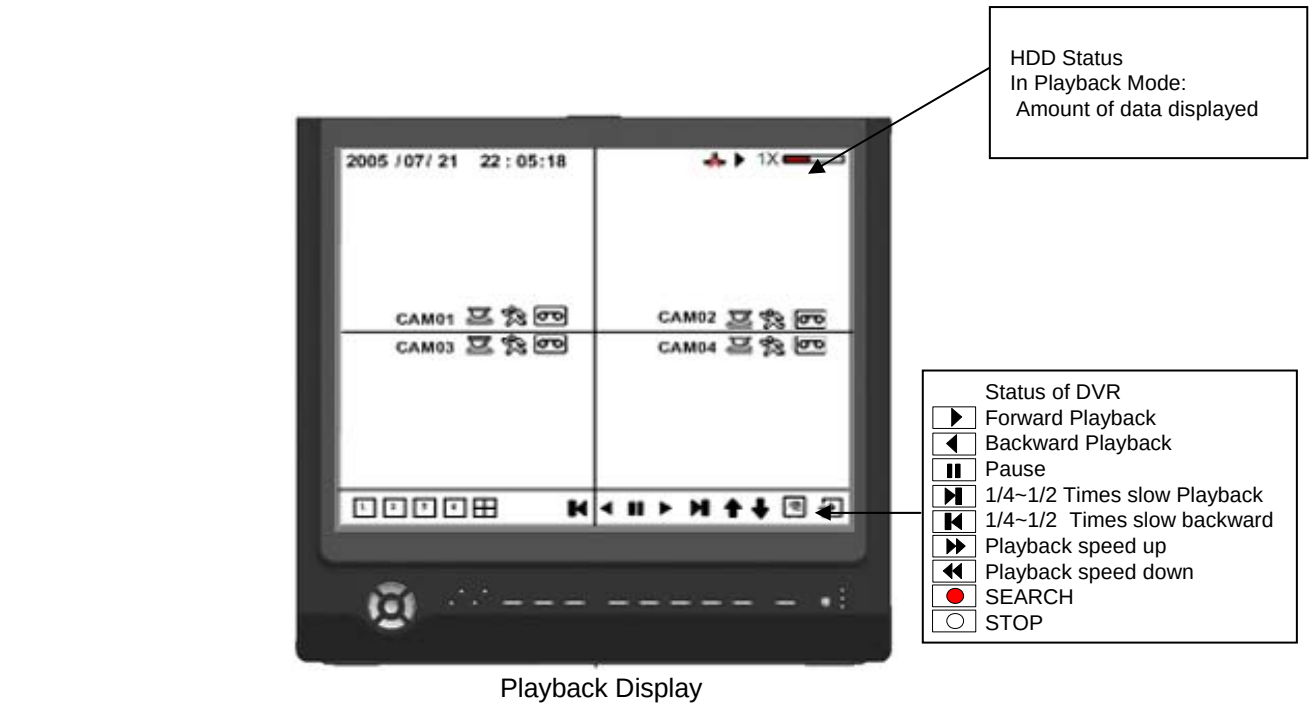




4-3. Display Configuration



Live Display



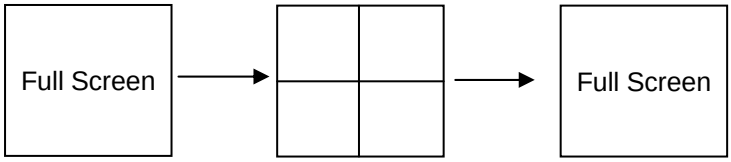
Playback Display

4-4. Live View Setup

1) Full / Multiple View

Switch to multi-screen display by pressing [MODE].
To enlarge each channel, press 1,2,3,4 channel button

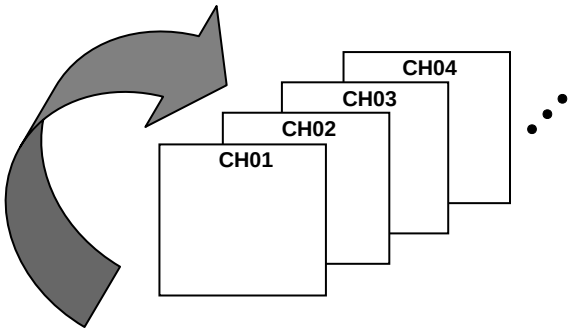
* MOUSE
Move a cursor to 'split icon' on the lower left corner of display and click it to view 4 channel division.
To enlarge each channel, click 1,2,3,4 Icon.



2) SEQ

Press [SEQ] button, It automatically displays full screen images in sequence.

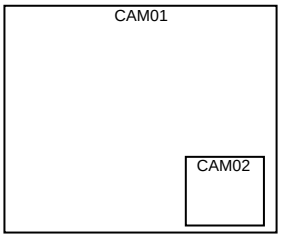
*MOUSE
Click 'SEQ' icon



3) Picture in Picture (PIP View)

When it is in full screen display mode, you can see other camera in a small window by pressing [PIP] button. The other camera in small window is rotating in sequence to next number of camera

*MOUSE
Click [PIP] icon



4) ZOOM View

In live mode, if you press ZOOM button, images are displayed in two times larger size.
While using [ZOOM] mode, you can move the enlargement area by using direction button
To exit ZOOM mode, press ZOOM button again.

*MOUSE
Click [ZOOM] icon, then move the mouse to move the area.
To exit ZOOM mode, click [ZOOM] icon again.

4-5. Record

It records as a setting made by a user in Schedule Mode.

- Schedule Record
  Go to MAIN MENU-SCHEDULE SETUP and setup schedule as you want. It records as a setting.
- Record Icon in Red indicates Schedule Record, Motion record, and alarm record.

Record [RED]

Stop recording [WHITE]

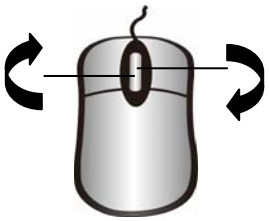
- This DVR unit does not record in following conditions ;

※ When Over write function is off and HDD is full
※ When you back up recorded images by using CDRW burning or USB backup.
※ When you update a firmware
※ When you are in HDD management menu mode

4-6. Playback

On record mode or stop mode, press [PLAY] button to play the recorded data in 1x speed.
Use [-], [+] button to adjust playback speed.

*MOUSE
click [▶]
You can adjust playback speed by moving a mouse wheel button up and down.



1/16x: 16 times slower than normal playback speed.
1/8x : 8 times slower than normal playback speed.
1/4x : 4 times slower than normal playback speed.
1/2x : 2 times slower than normal playback speed.
1x : Normal playback speed
2x : 2 times faster than normal playback speed..
4x : 4 times faster than normal playback speed.
8x : 8 times faster than normal playback speed.
16x : 16 times faster than normal playback speed.
32x : 32 times faster than normal playback speed.

4-7. SEARCH

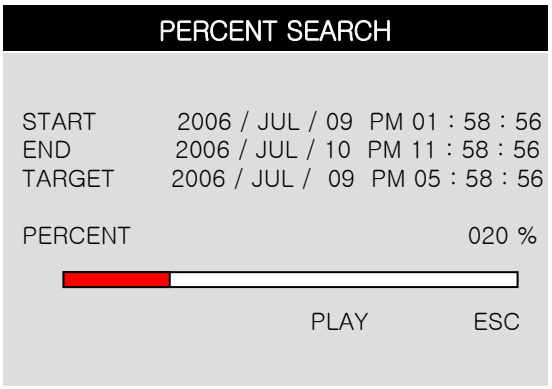
Press [SEARCH] button, 3 different methods for searching recorded data are available as shown windows. Use direction key to select searching method.

*MOUSE

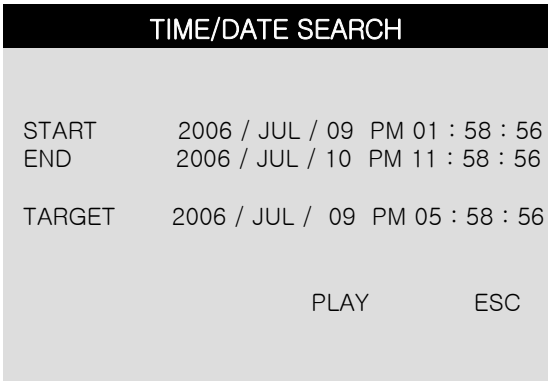
Click [SEARCH] icon.
In PERCENT SEARCH Mode, you can select a certain data by clicking on the bar.

1. PERCENT SEARCH
   Search by percentage of total recorded data. It starts from image corresponding to set % of data on the search bar.
2. TIME/DATE SEARCH
   Search by time & date. Playback starts from the time & date selected.
3. EVENT SEARCH
   Search by event list (Motion, Alarm, Video Loss)

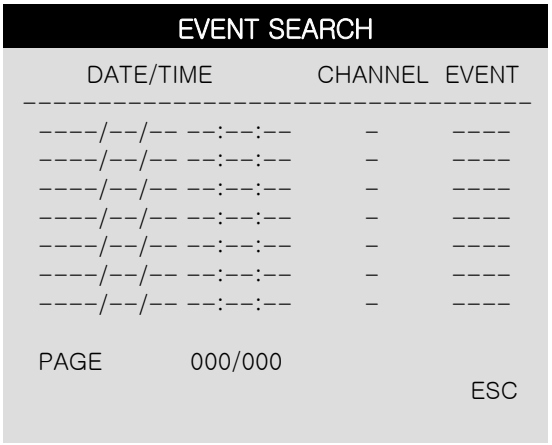
SEARCH MAIN MENU



PERCENT SEARCH



TIME/DATE SEARCH

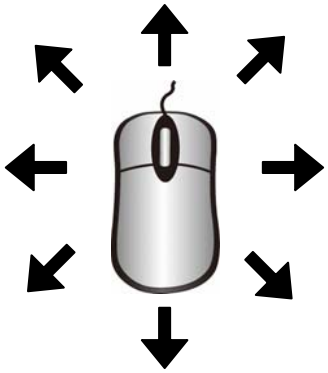


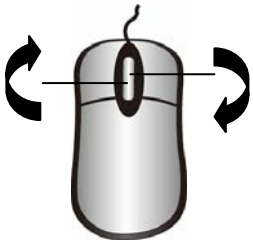
EVENT SEARCH

4-8. PAN/TILT/ZOOM Camera Operation

Press [PTZ] button for PTZ control mode. Use direction key to control PAN/TILT function. ZOOM IN or ZOOM OUT is controlled by pressing [+] or [-].

*MOUSE
Click [PTZ] icon to control a PTZ camera. PAN/TILT is controlled by Left & Right buttons and Zoom In & Out is controlled by a wheel of a mouse. You can control a PTZ camera in 8 different directions as shown below.

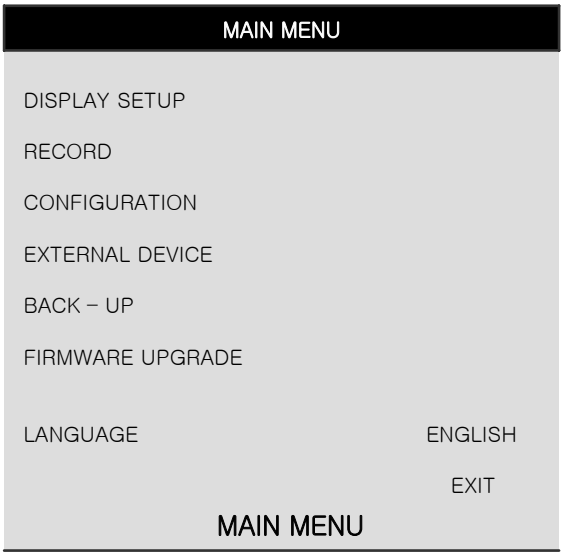




CHAP. 5 Set up

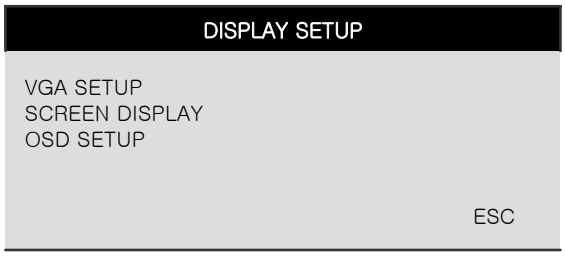
5-1. General Operation

Front buttons	Functions
MENU	Enter into SYSTEM MENU, Move to previous menu, ESC
ENTER	Selection key. Move to sub-menu, Change status (ON or OFF)
UP	Move to upper side
DOWN	Move to down side
LEFT	Move to the left
RIGHT	Move to the right
PLUS [+]	Increase the option value
MINUS [-]	Decrease the option value
Mouse buttons	**Functions**
Mouse Wheel	Up and down of setup value on the Menu mode Up and down of Playback speed Zoom in and out in PAN/TILT/ZOOM mode
Right	Decrease of setup value on the Menu mode
Left	Increase of setup value on the Menu mode Execute all of the function (clicking icons)

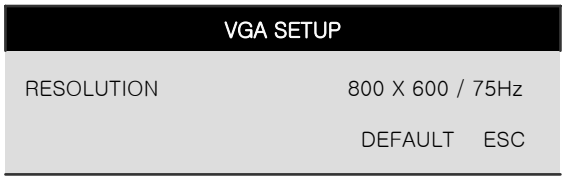


5-2. DISPLAY SETUP

This is setup menu for display on the screen.
If you click 'DISPLAY SET UP', then you change setting values for display as shown below.



1) VGA SETUP

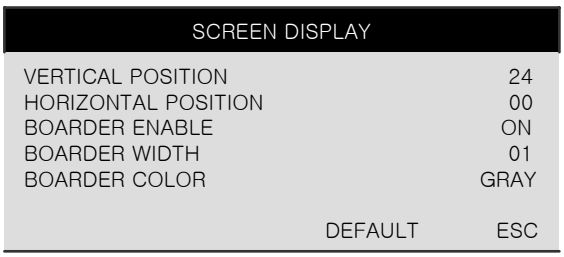


VGA SETUP : Connection to a VGA monitor (CRT/TFT LCD), if optional VGA board is fixed on the main board.
You can set 'RESOLUTION' for VGA as shown below.
(VGA Default is 800X600.)

640X480 / 60Hz	640X480 / 75Hz
800X600 / 60Hz	800X600 / 75Hz
1024X768 / 60Hz	1024X768 / 75Hz
1280X1224 / 60Hz	1280X1024 / 75Hz

**** Please check the resolution range that your VGA monitor supports first before you use VGA monitor. If you select high resolution such as 1024X768, 1280X1224 on VGA SETUP with VGA monitor that does NOT support those high resolutions, image display may NOT be seen properly.**

2) SCREEN DISPLAY



VERTICAL POSITION : 0 ~ 63
HORIZONTAL POSITION : 0 ~ 63
BORDER ENABLE : ON/OFF
BORDER WIDTH : 1 ~ 10
BORDER COLOR : COLOR SELECT

3) OSD SETUP

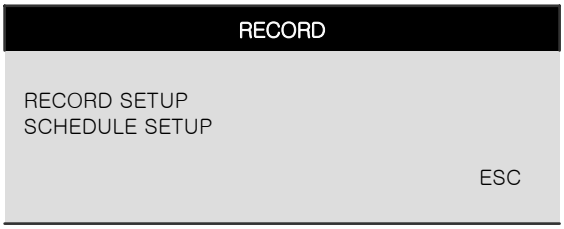
OSD SETUP	
TOP OSD OFFSET	0
BOTTOM OSD OFFSET	0
DEFAULT	ESC

TOP OSD OFFSET : -10 ~ 9

BOTTOM OSD OFFSET : -10 ~ 9

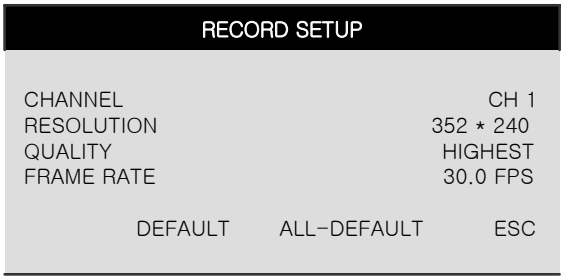
5-3. RECORD

This is the most important configuration of the DVR. When you select 'RECORD SETUP' in the main menu, you can see the window as shown on the left.



1) RECORD SETUP

You can change setup value by using button or mouse.



(1)CHANNEL : CHANNEL select

(2) QUALITY : Set recording picture quality.
(There are five quality steps)

- LOWEST
- LOW
- NORMAL [DEFAULT]
- HIGH
- HIGHEST

To send more images via IP network and longer recording time, set Quality at 'LOW' or 'NORMAL' and record at 360x240.

Data size of image in PAL system is a little bigger than NTSC system, but the total recording time is same as in NTSC system.

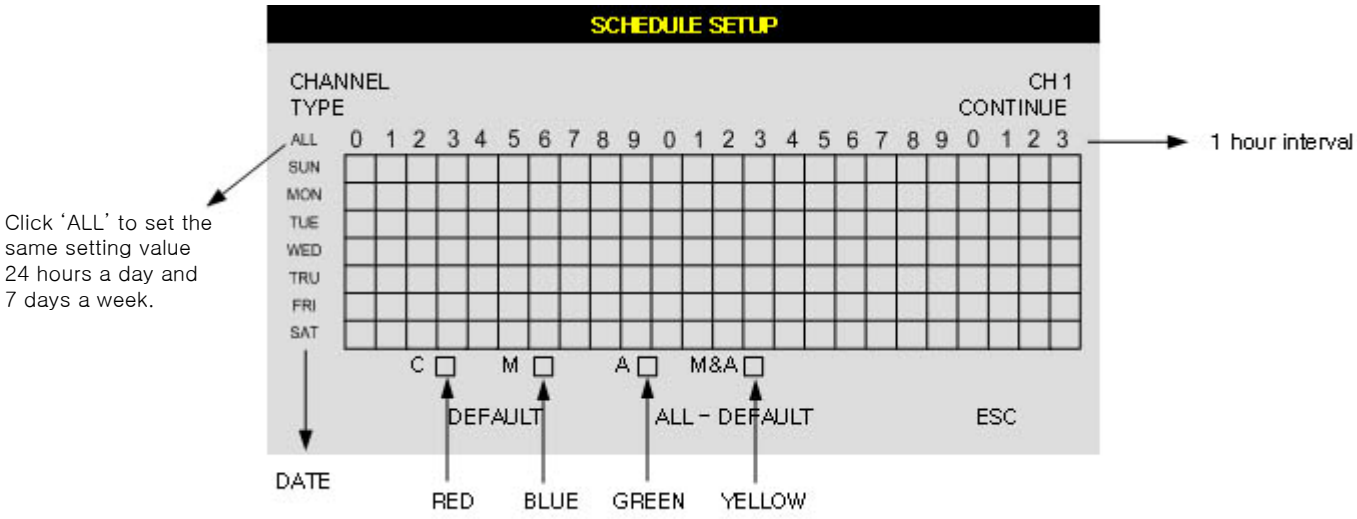
(3) RESOLUTION : Set recording resolution
- 704x240(NTSC) , 720x288(PAL)
- 352x240(NTSC) , 360x288(PAL) [DEFAULT]

(4) FRAME RATE : Set FRAME per each channel
1 ~ 30 FPS(NTSC) [DEFAULT 7.5 FPS]
1 ~ 25 FPS(PAL) [DEFAULT 7.5 FPS]

2) SCHEDULE SETUP

Unless you select other recording mode, DVR system records in Schedule Recording mode. In Schedule Recording mode, you set type of recording by 1 hour time interval.
Default frame rate for continuous recording speed is 30 FPS.

Set Recording time interval for a day of the week and recording type (1 hour time interval)



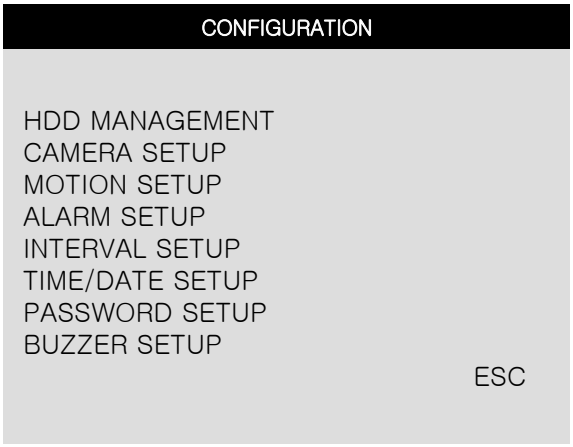
TYPE : Set up Recording type
CONTINUE: 24 hour recording
ALARM: Alarm recording
MOTION : motion recording
MOTION & ALARM : Motion & Alarm recording

※ Each type is indicated in different color of boxes.
You can set up schedule by dragging a mouse and all blocks can be activated or deactivated by using 'ALL' button.

※ Default setting is continuous recording.

5-4. CONFIGURATION

Various parameters for system can be set in CONFIGURATION menu.



1) HDD MANAGEMENT

You can see HDD Model name, serial number, number of blocks and size of HDD. You can also clear HDD. (**While you are in this HDD MANAGEMENT Mode, DVR does NOT record.**)

MODEL : HDD MODEL NAME
SERIAL : HDD SERIAL No.
BLOCKS : HDD LBA BLOCK Number
SIZE : HDD TOTAL SIZE
SPEED : HDD MODE
OVERWRITE : ENABLE, DISABLE

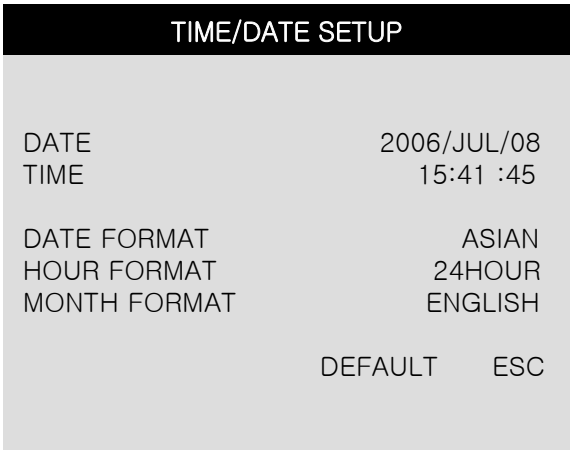
2) TIME/DATE SETUP

In this setup, you can select date/time of DVR system and display format.

You can adjust values by using a mouse wheel or left/right button.

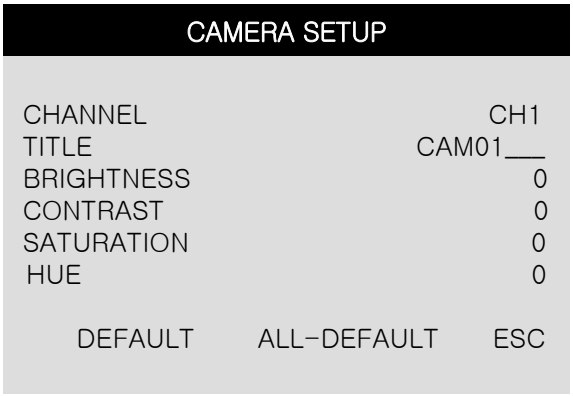
※ For the first time installation, date/time setup must be completed first.

DATE FORMAT : DATE(ASIAN/EUROPEAN /AMERICAN)
HOUR FORMAT : (2H/24H)
MONTH FORMAT : (ENGLISH,NUMERIC)



3) CAMERA SETUP

You can setup values for each camera.

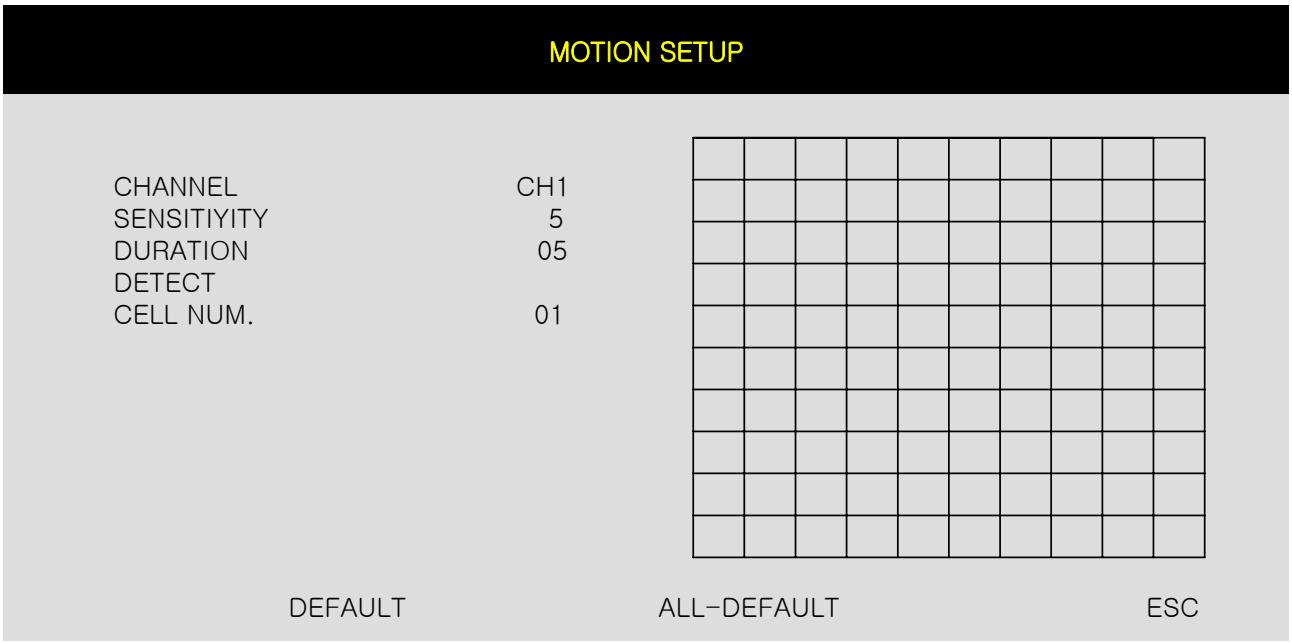


(1) CHANNEL : You can select a channel which you want to change values.
(2) TITLE : You can name each camera with 8 digit numbers or letters combination.
Move a cursor onto a location that you want and choose numbers or letters by using [ENTER] or mouse wheel or left/right button. To exit to the previous menu mode, press [MENU] button.
DEFAULT = CAM01___ ~ CAM03___

(3) COLOR : You can adjust color of image display of each camera.
BRIGHTNESS : Adjusting brightness (-32 ~ 31) [DEFAULT = 0]
CONTRAST : Adjusting contrast (-32 ~ 31) [DEFAULT = 0]
SATURATION : Adjusting saturation (-32 ~ 31) [DEFAULT = 0]
HUE : Adjusting hue (-32 ~ 31) [DEFAULT = 0]

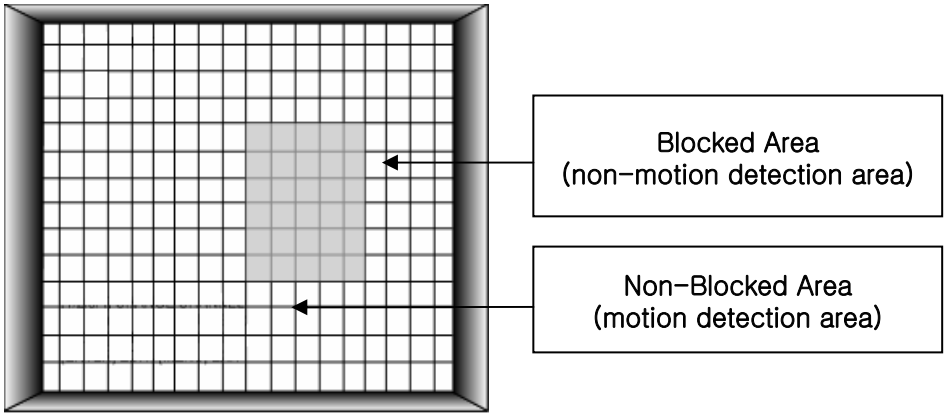
(4) Executing Buttons
ALL : Initializing all values for all channel as a default setting value.(CH1 ~ CH4)
DEFAULT : Initializing all values for the applied channel only as a default setting value.
ESC : Used to exit

4) MOTION SETUP



MOTION SETUP
- CHANNEL : Select a channel which you want to change values.
- SENSITIYITY : Adjusting sensitivity of a movement. You can adjust level 1 ~ level 5. [DEFAULT : 1]
- DURATION : Whenever motion is detected and it is set at Motion Recording mode, DVR records for a certain time being from the point of time when motion is detected. (1 sec.~99 sec.) [DEFAULT : 1 sec.]
- DETECT CELL NUM. : Select the minimum of CELL for MOTION EVENT to be activated.
- ALL-DEFAULT: Default setup for all channels

MOTION MASK SETUP : Set motion detection area.
- CELL : Move to the location which you don't want to detect and then click it by using left button. Motion is detected, when the cell is activated. Motion is not detected on non-activated cells.
- BLOCK ON : Select non detection area by block. (The blocked cells are non-activated area) By clicking left button and dragging a mouse, you can block the cells. The right button is used for delete the blocked cells. To save the setting value and exit, press [MENU] or click 'ESC'.
- BLOCK OFF : Select detection area by using the right button of a mouse. The right button is used for delete the blocked cells. To save the setting value and exit, press [MENU] or click 'ESC'.



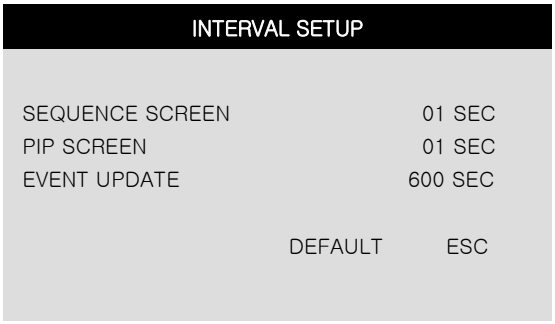
5) INTERVAL SETUP

See the switching time interval for SEQ or PIP function. (1 sec. ~99 sec.)

SEQUENCE SCREEN :Set the sequencing switch time interval in live full screen.

PIP SCREEN : Set the sequencing switch time interval of PIP window.

EVENT UPDATE : Set the minimum time interval of event to be listed on EVENT LIST.
If EVENT UPDATE time is set at 5 sec, only following event happened 5 sec or more than 5 sec later previous event shall be listed on EVENT LIST.

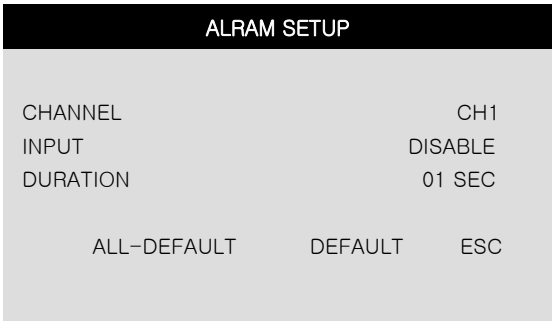


6) ALRAM SETUP

Set type of alarm sensors connected to DVR unit. N.O represents Normal Open type and N.C Normal Close type.

INPUT : Select NORMAL OPEN, NORMAL CLOSE, or DISABLE.
DISABLE represents not to use alarm sensor connected to DVR.

DURATION : Set the duration of alarm when an ALARM is activated. (0 sec. ~ 300 sec.)

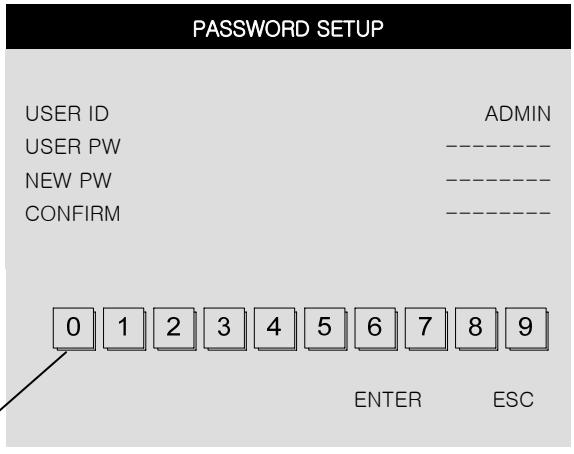


7) PASSWORD SETUP

Set user ID and Password.
You can make up to 8 digit number combination for a password.
Press [ENTER] to activate the section, then press [↓] to move to the numbers.
Choose the number and press [ENTER].
When you finish to write the numbers, move to 'ENTER' icon and press [ENTER] button.

To change password, you need to click 'USER PW' first to activate the menu.

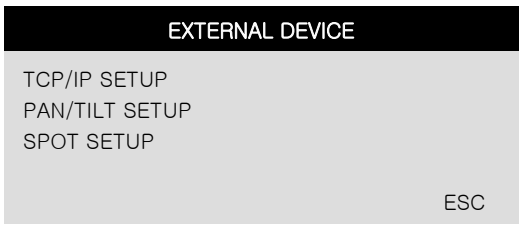
You must input current password and then input new password.
And input again new password to confirm.



※ Changing the user Password in the first operation is recommended.

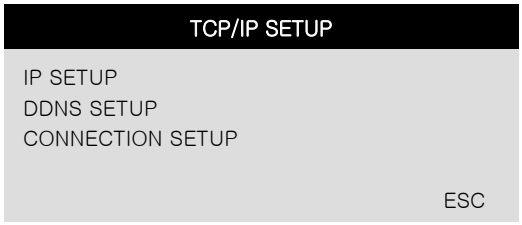
5-5. EXTERNAL DEVICE

Set parameters of external devices connected to DVR like Ethernet, PTZ camera, Spot monitor etc.
If you click ETERNAL DEVICE on the main menu, then you will see the window shown on the right.



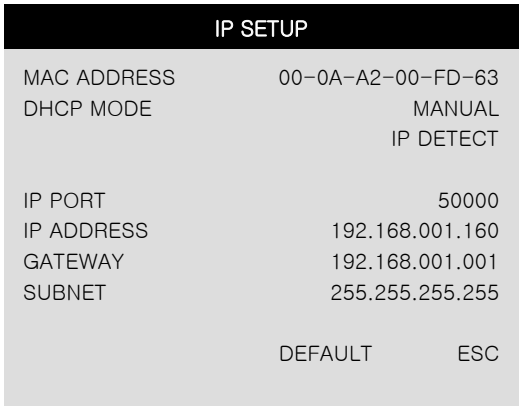
1) TCP/IP SETUP

TCP/IP function enables you to see live pictures and recorded pictures via internet.

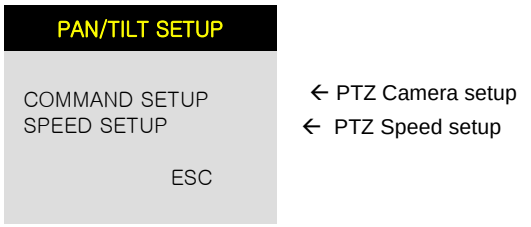


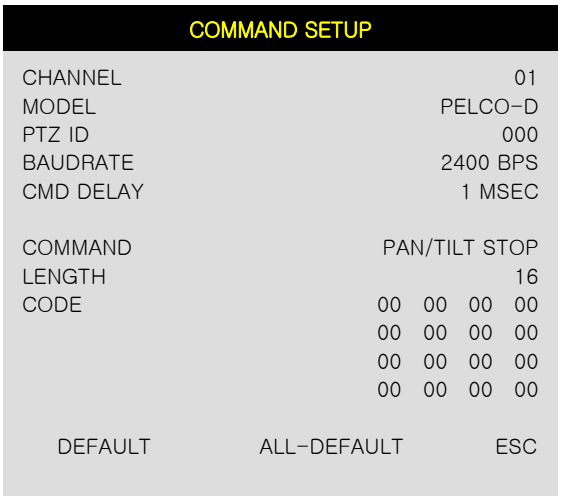
(1) IP SETUP :

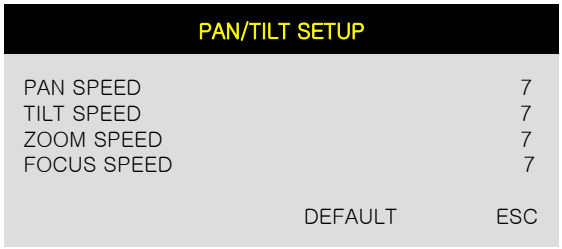
Shows the network information assigned to the DVR unit. If the DHCP setup status is AUTOMATIC, you can set the IP port only and if the DHCP setup status is MANUAL, you must set all parameters.
If IP port number is blocked, a network specialist's advice is needed.



2) PAN/TILT SETUP

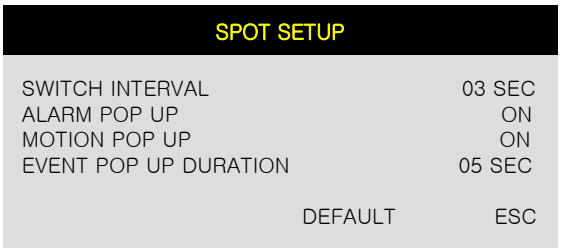






1) CHANNEL : Select channel
2) MODEL : Select camera model (protocol type) per each channel
3) PTZ ID : Select PTZ ID (per each channel)
4) BAUDRATE : Select data transmission speed
5) CMD DELAY : Select command delay time

3) SPOT SETUP



(1) SWITCHING INTERVAL
Channel switching time (01 sec. ~ 99 sec.)

(2) ALARM POP-UP
When ALARM is detected, the image of channel connected with Alarm sensor pops up.
Set ALARM detection pop-up (ON/OFF)

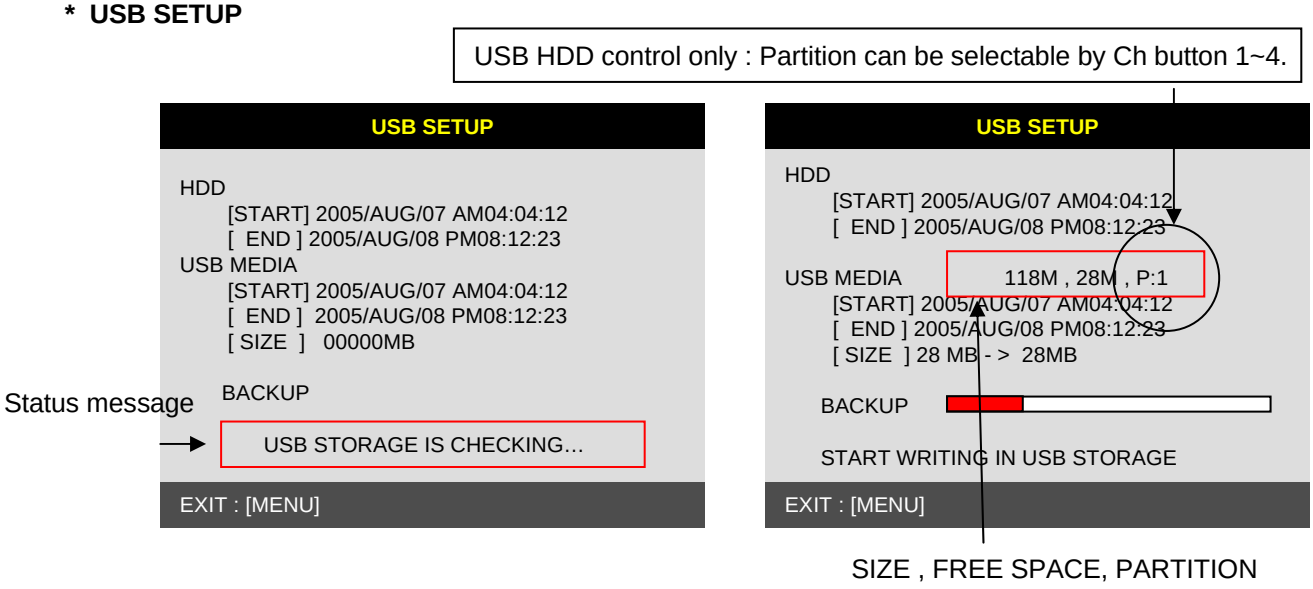
(3) MOTION POP-UP
Set MOTION detection pop-up (ON/OFF)

※ EVENT POP-UP DURATION
Set EVENT POP-UP DURATION

If events (MOTION or ALARM) happen on several channel at the same time, channel No. 1 has the first priority to pop up. For example, if events happen on channel No. 1, channel No. 2, and channel No. 4 at the same time, channel No. 1 pops up. If the motion disappears on channel No. 1, then channel No. 2 pops up for the duration that you set. However, even though motion happens on channel No. 1 again within the duration, channel No. 2 still displays. If motion on channel No.1 keeps on going even after the duration, channel No. 1 pops up again.

5-6. BACK-UP

*** USB SETUP**



Press [MENU] button and go to 'BACKUP' menu.

1. Connect USB memory stick to USB port on DVR and select the start time & date from which you want to back up.
   ※ The START & END time / date in HDD sub-menu only shows start and end of recording. This is not selectable and editable.
2. To set start time of back-up and back-up data size of USB media inserted, use a mouse or button.
   ※ End of back-up time will be calculated automatically as per start time & date and the back-up data size you set.
   ※ You can select the back-up data size (size of back-up data from start of back-up), but END of back-up time is automatically determined by DVR itself.
3. Press [ENTER] at 'BURN' icon or click 'BURN' then it starts to backup.
4. And follow up to the message on the screen for next step.
   ※ While you are on backup procedure, it is impossible to cancel backup process.
   ※ During backup process, DVR does not record.
5. You can verify the back-up and install the Backup Player on your PC to view the backup data.

System Status Messages

(1) If MEMORY STICK is not inserted :
- USB STORAGE IS CHECKING...
- USB STORAGE IS NOT AVAILABLE
- RE-CONNECT THE USB STORAGE
- CONECT THE OTHER USB STORAGE

(2) When MEMORY STICK or USB HDD is recognized
- USB STORAGE IS CHECKING ...
- THERE IS A FREE SPACE ON STORAGE
- USB STORAGE IS AVAILABLE

(3) During Back-Up
- CHANGE WRITE PROTECT MODE (Only WRITE PROTECT is caught, it can be seen)
- START WRITING IN USB STORAGE
- FINISH WRITING IN USB STORAGE

(4) Error Message
- THERE IS A PROBLEM ON USB PORT (If USB PORT fails to work properly)
- USB STORAGE IS FULL (When USB is full)
- FILE SYSTEM IS NOT SUPPORTED (If File System is not supported)
- SIZE IS LARGER THAN FREE SIZE (If back-up size is larger than free space)

※ If Back-Up size is larger than 2GB, it creates several files. (It saves by 2GB).

CHAP. 6 Network Setup

6-1. DVR Network Configuration

Please call your provider to identify what type of service they are providing you. You will need to know following :

Upload speed – For your own knowledge for expected frame rates.
Download speed – For your own knowledge for expected frame rates.
Addressing – For determining what scenario you should follow.
Router ON Site or Just a Modem – For determining what scenario you should follow.

※NOTE : If your provider is using PPPoE (usually DSL providers), you MUST hlledave a router installed on site and follow CASE C For DVR setup and access.

※Please verify Internet access after installing any new equipment (routers, switches, modems etc)

PC's TCP/IP Setting

Before configuring the DVR, please fill out the information below if applicable;

Choose any PC on your network and determine its TCP/IP settings;

IP Address : _____(ex.192.168.1.5)

Subnet Mask :_____(ex. 255.255.255.0)

Default Gateway :_____(ex.192.168.1.1)

Next pages are several network scenarios. Please identify which scenario your current network falls within and follow the instructions for configuring and accessing your DVR via TCP/IP.

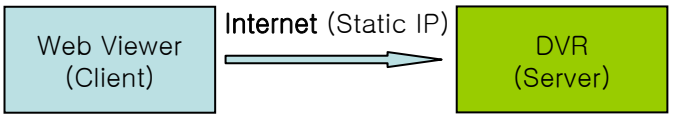
TCP/IP function enables you to see live pictures, recorded pictures and also allows you to backup, and control a PTZ camera via internet.

How to set Network depending on ISP

1. Static IP

User input IP address in IP CONFIG SETUP which is assigned from ISP company.

1) Verify if IP address is OK or not with PC before connecting DVR.
2) Connect LAN cable to DVR after confirmation.
3) DVR : MENU→EXTERNAL DEVICE→TCP/IP.
4) Set DHCP to MANUAL and go into TCP/IP SETUP.
5) Verify if MAC ADDRESS starts from 00-0A-A2….
6) Input IP address which is assigned from ISP company.
7) Set IP PORT. (50000 recommended)
8) Input GATEWAY which is assigned from ISP company.
9) Input SUBNET MASK which is assigned from ISP company.
10) Go out of MENU SETUP.
11) Turn off and on Modem (Router) which is provided by ISP company.
-> This is to reset client of MAC from ISP company.
User have to wait for 30 seconds after turing on.
12) Access DVR with Remote Viewer Software.

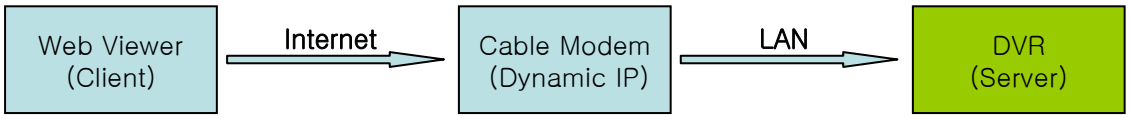


* If user fail to access, please verify 1,6,7,8,9,11 again.
* When speed is too slow and connection fails after access : MENU →EXTERNAL Increase value of Timeout to find the most suitable speed.

2. Dynamic IP

If you set 'AUTOMATIC' for DHCP Type on TCP /IP setup menu, IP information is automatically assigned from ISP's DHCP.

1) Verify if IP address is OK or not with PC before connecting DVR.
2) Connect LAN cable to DVR after confirmation.
3) Turn off and on Modem (Router) which is provided by ISP company.
   -> This is to reset client of MAC from ISP company.
   User have to wait for 30 seconds after turning on.
4) Turn off and on DVR.
5) DVR: MENU→EXTERNAL DEVICE→TCP/IP.
6) Verify if MAC ADDRESS starts from 00-0A-A2…
7) Set DHCP to AUTOMATIC and detect IP to get Dynamic IP.
8) Go out of MENU SETUP after getting IP successfully.
9) Access DVR with Remote Viewer Software.



* If user fail to access, please verify 1,3,4 again.
* When speed is too slow and connection fails after access : MENU → EXTERNAL DEVICE → TCP/IP SETUP → CONNECTION SETUP.
  Increase value of Timeout to find the most suitable speed.

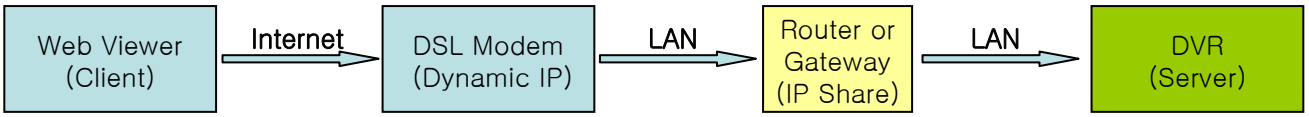
3. Dynamic IP of PPPoE (DSL)

DVR doesn't support DSL(PPPoE), user have to set NETWORK with IP SHARE if user need to access DVR remotely. At this time, user have to port forward on DVR. Please contact IP SHARE Manufacturer if You need to know how to forward port.

Even though user have Static/Dynamic IP, if user want to use another device (PC) through IP SHARE, User can set NETWORK as follows,

1) Verify if IP address is OK or not with PC before connecting DVR.
2) Connect Router (IP SHARE) to DSL modem as shown the following picture.
3) Set the internet connection on Router (IP SHARE). (Refer to the Router Manual).
4) Verify if sub-group of network in Router is OK or not.
5) Connect DVR to Router.
6) DVR : MENU →EXTERNAL DEVICE →TCP/IP.
7) Set DHCP to MANUAL and go into TCP/IP SETUP.
8) Verify if MAC ADDRESS starts from 00-0A-A2….
9) Input internal IP address which user assigned from Router.
10) Set IP PORT, (50000 recommended)
11) Input GATEWAY of Router.
12) Input SUBNET MASK of Router.
13) Go out of MENU SETUP.
14) Forward port from Router.(Refer to the Router Manual.)
15) Access DVR with external IP and Port (Port forwarded).

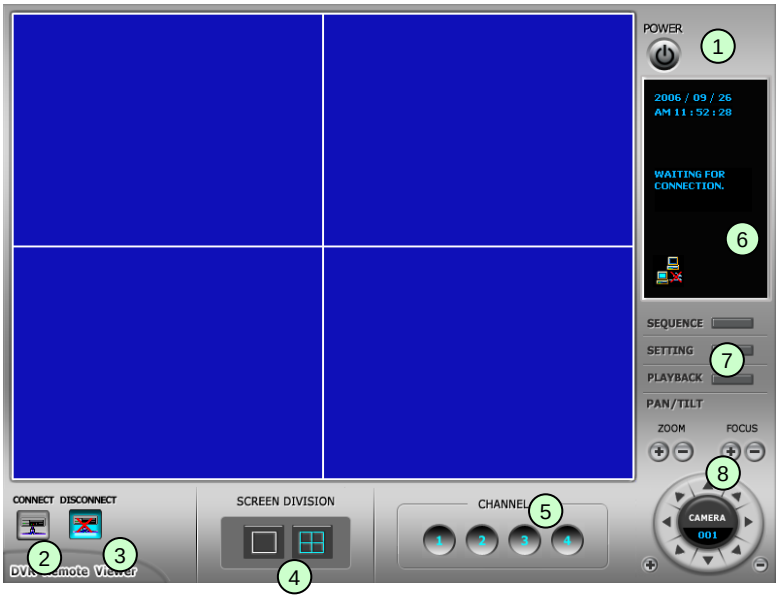
* If Router support DDNS, user can access Remote Viewer using Domain Information.



* If user fail to access, please verify 1,4,15 again.
* When speed is too slow and connection fails after access : MENU →EXTERNAL DEVICE →TCP/IP SETUP →CONNECTION SETUP
Increase value of Timeout to find the most suitable speed.

6-2. Remote Viewer program

MAIN INTERFACE



①- **Power button** : Press the Power switch to exit the program. Please disconnect the live feed before powering off the software

②- **Connect button** : Press the Connect button to view the live images from the DVR. These are the same images being displayed on the monitor of the DVR, with a delay depending on your internet connection at both the DVR location and from where you're currently accessing.

③- **Disconnect button** : Press this button to disconnect from the DVR unit. Then you may power off the software.

④- **Screen Division button** : Select how many channels to view simultaneously (single, 4-split). When you select a view you will see the Channel Numbers highlighted which determine what channels are currently being viewed.

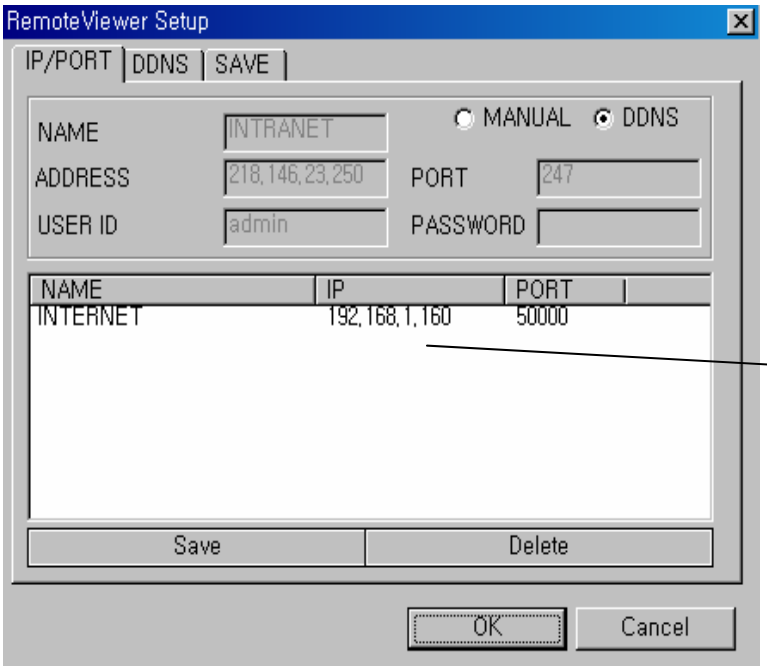
⑤- **Channel number button** : Select the channel that you want to view based on what Screen Division view is enabled.

⑥- **Status window** : Display's the current time and date based. The date is in the format : Year/Month/Day. You will also see the status of your connection.

⑦- **Setting, Playback, and Sequence buttons ;** a. Setting : Enables the software configuration screen.
b. Playback : Enables the remote playback screen.
c. Sequence : When in single channel view, hitting the sequence button will sequence through all active channels at a speed specified in the settings menu.

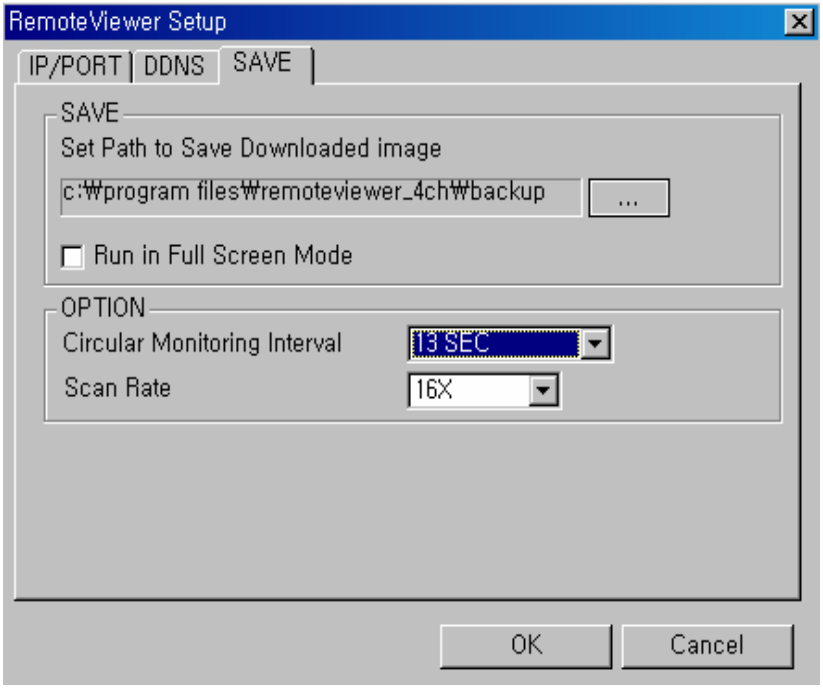
⑧- **PTZ control :** You can control a PTZ camera via the software with these controls.
a. First, you must input or configure the specific PTZ protocol into the software in order to communicate with the PTZ device.
b. When you press any of the controls for the PTZ, please press and hold the button for 1-2 seconds per instance to compensate for the data transmission rate. If you do not and instead simply click the PTZ buttons, you may get undesired results (having the requested operation transmitted repeatedly, regardless of your intention).
c. The plus and minus buttons send the PTZ commands to the corresponding PTZ camera ID.

IP/PORT Setting Screen



MANUAL	Input IP address and PORT manually
DDNS	Receive IP address and PORT from DDNS Server. For further information of DDNS, please contact your vendor.
Name	Name of IP address on the list.
Address	Input IP address which is set on DVR
PORT	Input PORT which is set on DVR
ID	Input ID which is set on DVR. (Please input 'admin'.)
Password	Input password which is set on DVR
IP List	It shows IP list which user input manually.
Select Button	Select IP and PORT on the list.
Save Button	Save IP and PORT on the list.
Delete Button	Delete IP and PORT on the list.

PTZ/SAVE Setting Screen



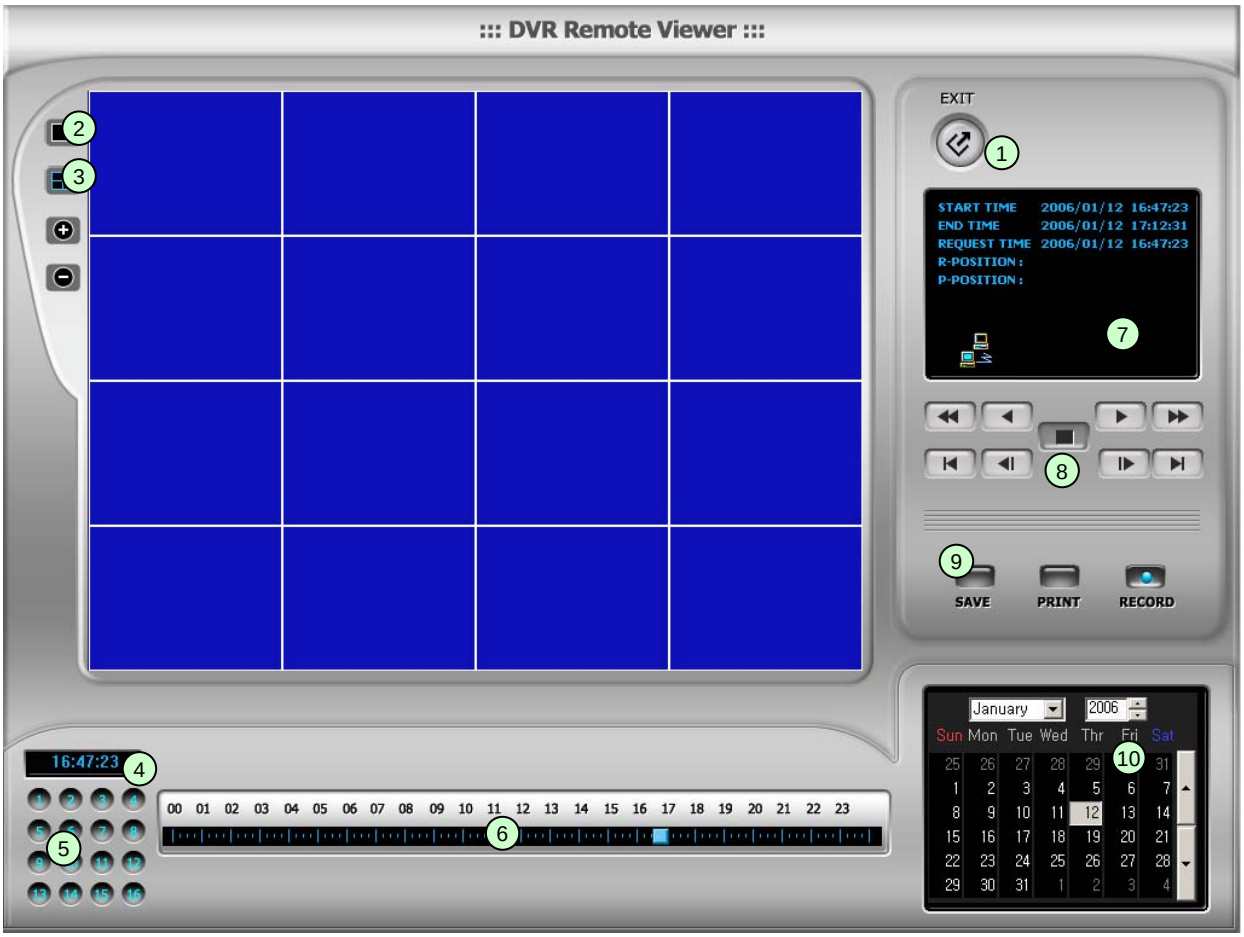
Circular Monitoring Interval : This indicates the speed of the channels sequence when the SEQUENCE button is used from the main interface.

Scan Rate **:** Set speed of playback.

Set Path to Save Downloaded image : Determines the location and folder on your PC where the downloaded video clips are stored.

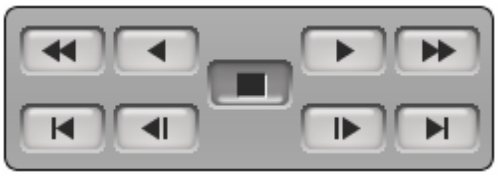
Run in full screen mode : When checked, this will enable the program to re-adjust the interface to completely fill your computer screen.

PLAYBACK INTERFACE through Remote Viewer



Function of each button in Search window.

① **Exit** : Exit to live window.
② **Full screen** : Select a certain camera to view in full screen.
③ **Quad** : To view quad mode (4 channels at the same time)
④ **Time** : The recording time & date information of the pictures which is being played.
⑤ **Channel selection** : Select each camera.
⑥ **Time selection** : Select a time from which user want to see. The playback will be started from this point.(drag the point using mouse)
⑦ **Start and end time** : Indicate record starting time and end time of images on HDD
⑧ **Other operating button** : Refer to the next page description.



: Play fast backward

: Play backward(1X)

: Play forward(1X)

: Play fast forward

: Stop playback

: Move to the start of recording

: Move to the previous hour

: Move to the afterward hour

: Move to the end of recording

⑨ **Command button**.

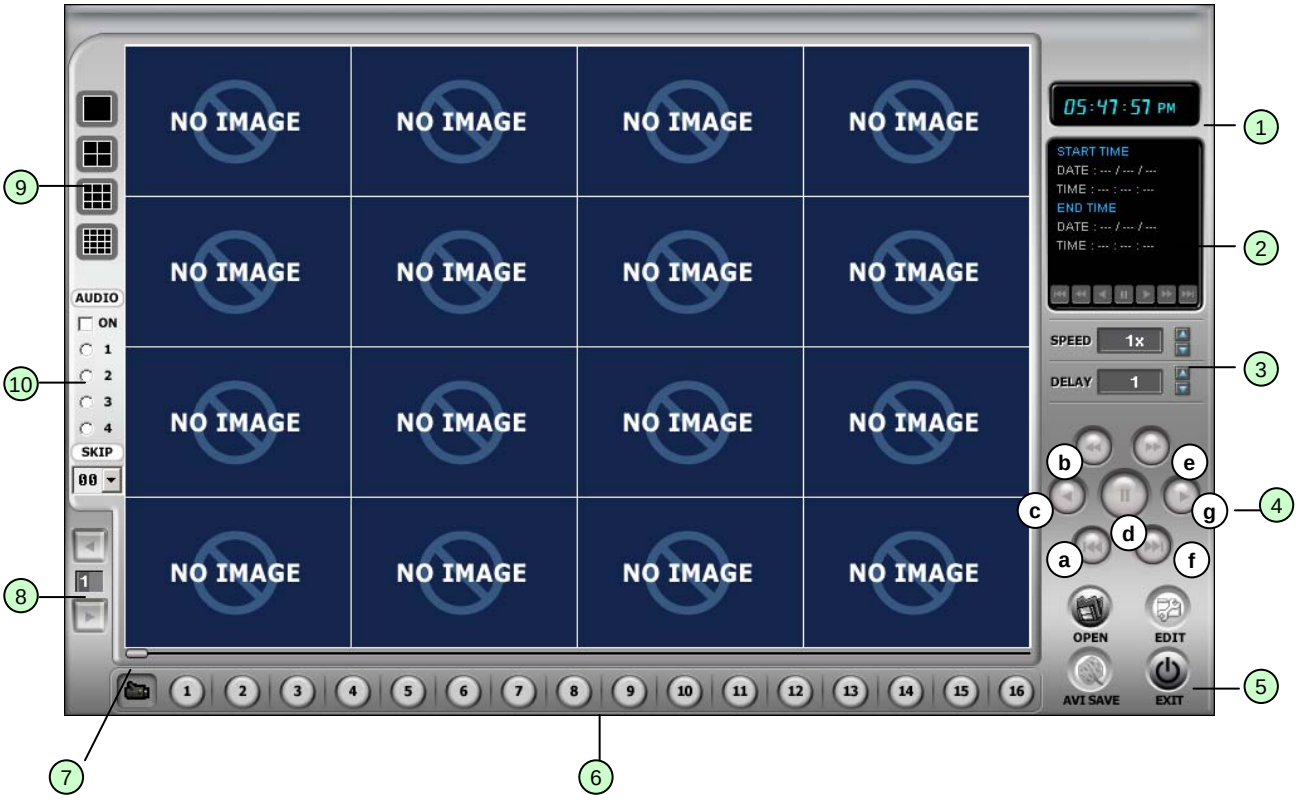
a) SAVE : After pressing the Stop button, click SAVE button to save the currently viewed image in jpg format.

b) PRINT : After pressing the Stop button, click PRINT button to print the currently viewed image.
c) RECORD : Press this button to download playback images transmitted from DVR unit into your PC. User can see saved images using Windows Media Player.

⑩ **Calendar**

Use this to select the date you wish to search. The filled in square outlines the date that is at the beginning of the hard drives. The outlined square indicates the data at the end of the hard drives. Select the date you wish to view. Verify a filled in square for that particular date. If an invalid date is selected it will default to the beginning of the hard drive(s).

6-3. Back-up Player



DVR units are with a built-in CD-RW(or USB), and user can copy images to CD(USB).
Using back-up player, user can see images on back-up files, and function of each button in Back-up player is as below.

① **Time** : Current time.

② **Status Window** : Start & End of time & date, Status of operating button.
When user play forward/backward, recorded time will appear.

③ **Play Speed button** : User can adjust play speed by pressing up/down button.
Speed (1/4X, 1/2X, 1X, 2X, 4X, 8X, 16X) Delay : (1, 2, 4, 8, 16, 32)

④ **Operation button** : User can search recorded data using these buttons.
a) Move the slide bar to start position
b) Play fast backward in preset speed
c) Play backward at 1x speed
d) Pause
e) Play forward at 1x speed
f) Play fast forward in preset speed
g) Move the slide bar to end position

⑤ **Function button**
a) OPEN : Open the Back-up Player.
b) EDIT : User can edit, save and print recorded image on Edit mode. This edit button will work when you selected one of 16 cameras.
c) EXIT : Exit from Back-up Player.

⑥ **Channel button** : Select channel to see pictures in full screen.

⑦ **Slide Bar** : Move to a point from which user want to see.

⑧ **Page button :** This button is just working when screen-division is 4-split in 8 ch DVR, or 4-split or 8-split in 16 ch DVR. Moves to next page.

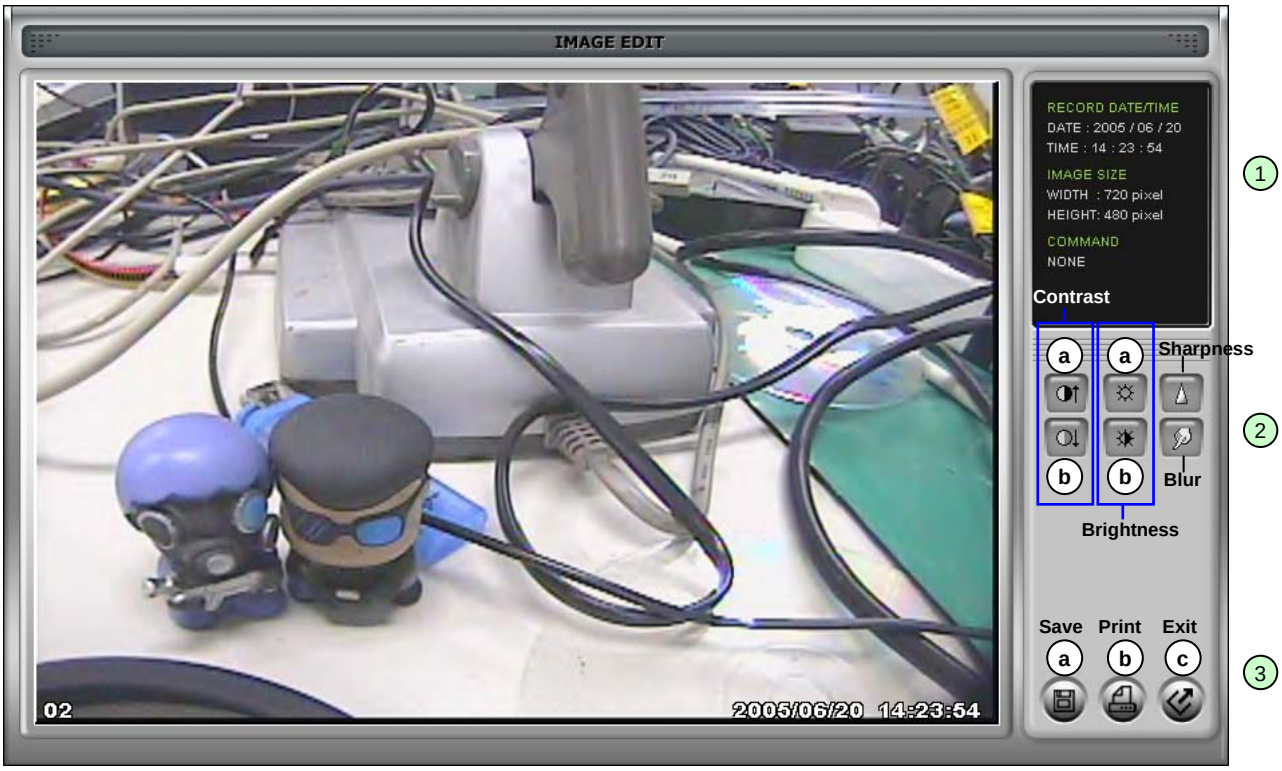
⑨ **Screen division** : 1/4/9/16

⑩ When you open the file, audio menu OSD will come up automatically.

- on : check to output recorded sound, then choose the audio channel 1,2,3 or 4
- skip : skip images forward.
* During playback, you can control only.

* During playback, only one channel is displayed and can not be changed to multi or full screen.

Image EDIT



① **Image Edit Status Window :** Shows record time & date, Image size, Command status.

② **Edit Button :** User can adjust color tone of copied images using this button.

- Contrast :
  a) make bright part of image brighter and dark part of image darker
  b) To reduce light and shade, lower contrast a little
- Brightness
  a) make an image brighter
  b) make an image darker
- Sharpness : give sharp-edge effect
- Blur : make an image soft

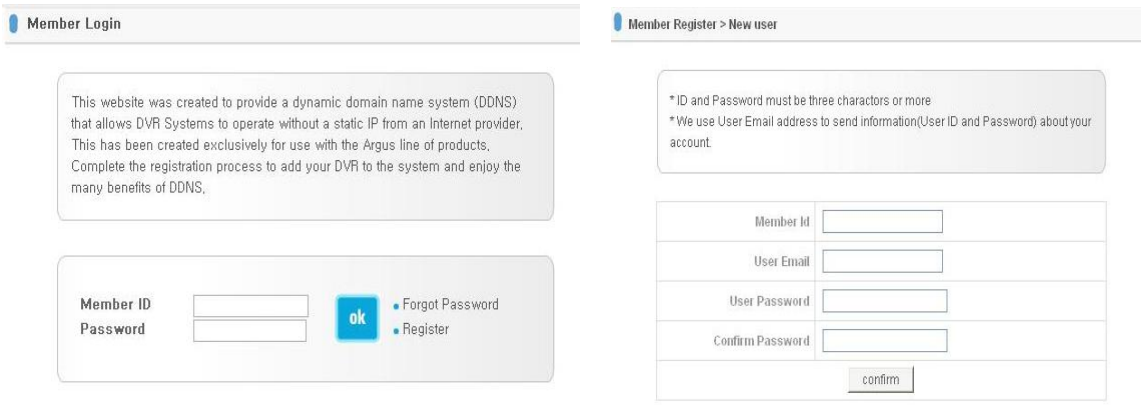
③ **Function button**

a) Save : User can save an image in JPEG format. It is saved in the folder where you installed back-up player.
b) Print : User can print current image user selected
c) EXIT : Return to Back-up Player mode.

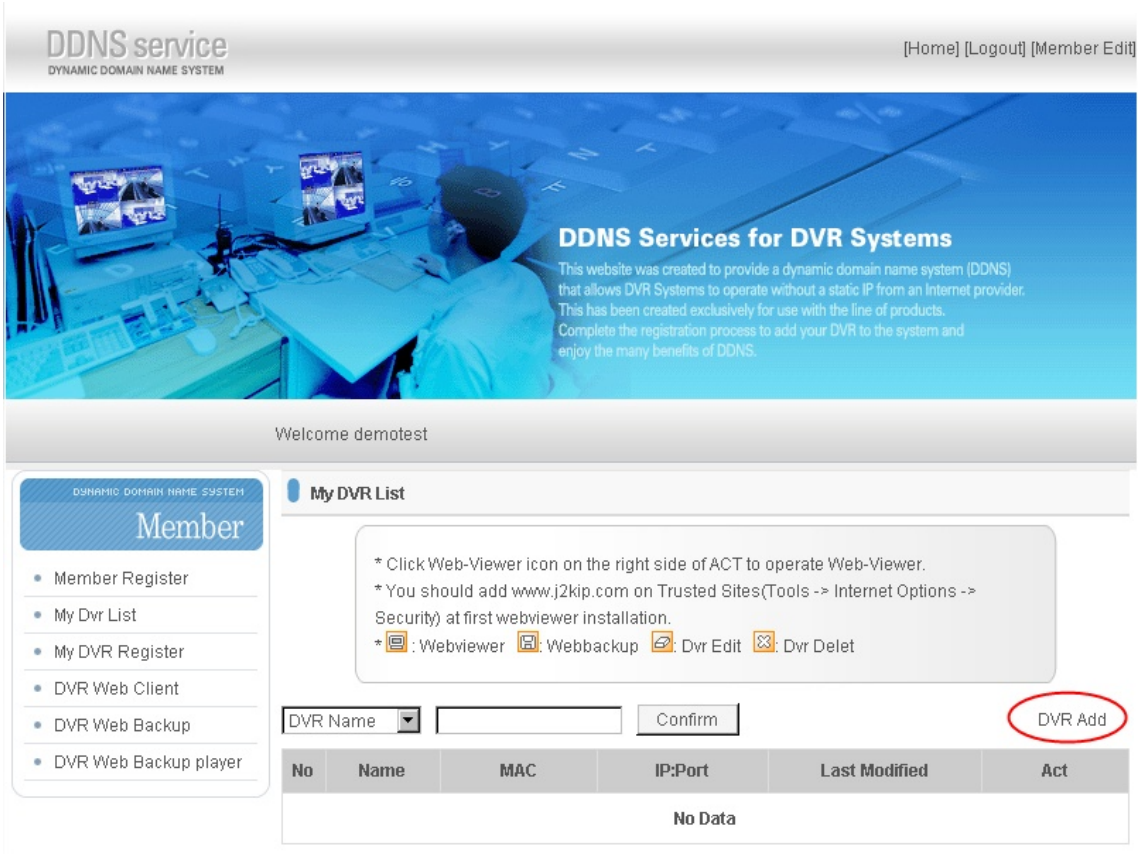
CHAP. 7 Web-Viewer Setup

7-1. Registering DVR for DDNS (DDNS Web-server)

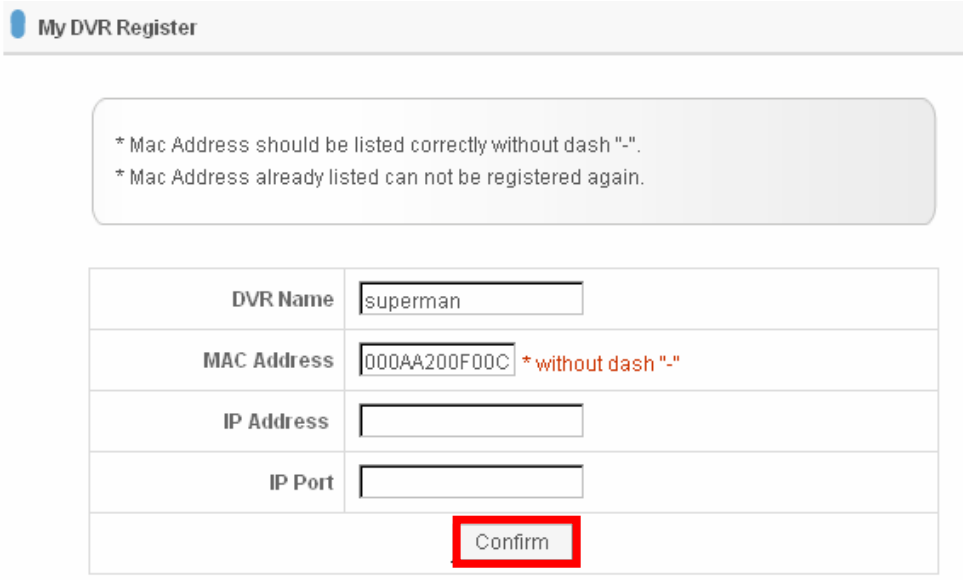
1) Please access www.j2kip.com and click Register Member ID.


Member Login
This website was created to provide a dynamic domain name system (DDNS) that allows DVR Systems to operate without a static IP from an Internet provider. This has been created exclusively for use with the Argus line of products. Complete the registration process to add your DVR to the system and enjoy the many benefits of DDNS.
Member ID
Password
ok
Forgot Password
Register
Member Register > New user
* ID and Password must be three charactors or more
* We use User Email address to send information(User ID and Password) about your account.
Member Id
User Email
User Password
Confirm Password
confirm

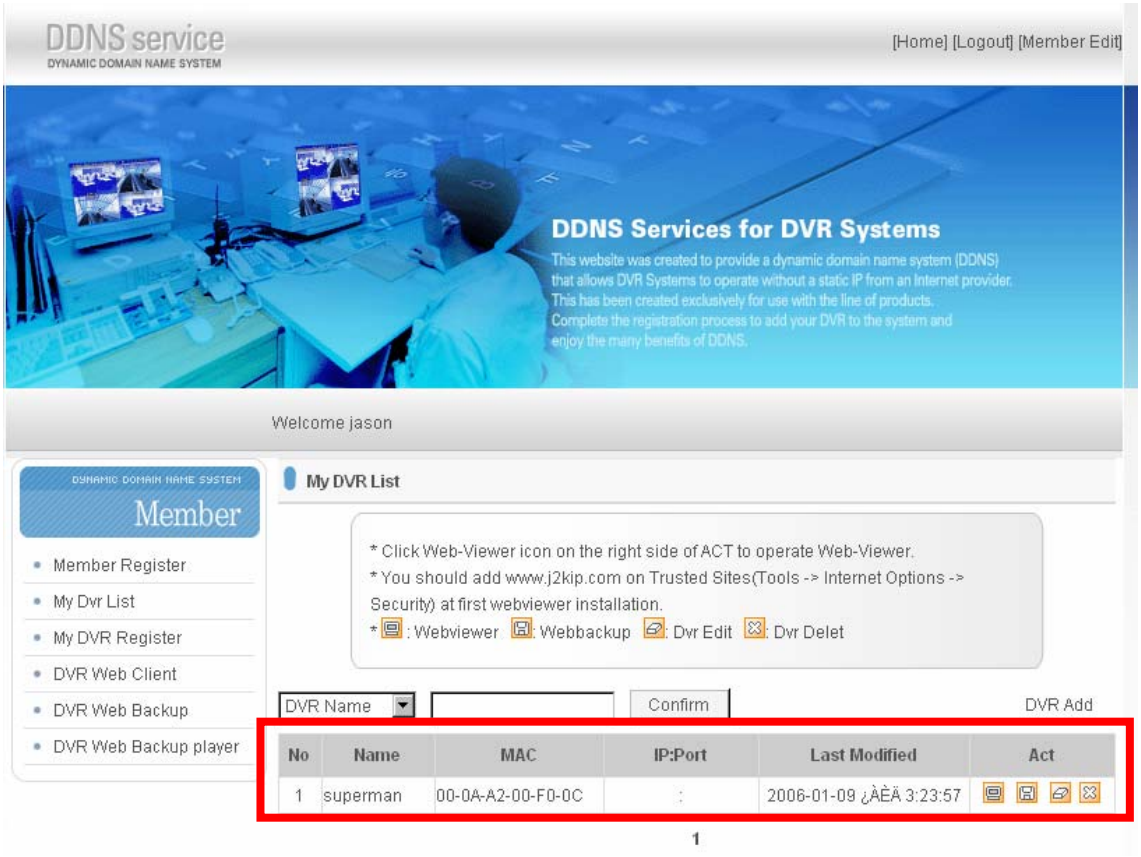
2) Please click DVR Add to register DVR.


DDNS service
DYNAMIC DOMAIN NAME SYSTEM
[Home] [Logout] [Member Edit]
DDNS Services for DVR Systems
This website was created to provide a dynamic domain name system (DDNS) that allows DVR Systems to operate without a static IP from an Internet provider. This has been created exclusively for use with the line of products. Complete the registration process to add your DVR to the system and enjoy the many benefits of DDNS.
Welcome demotest
DYNAMIC DOMAIN NAME SYSTEM
Member
Member Register
My Dvr List
My DVR Register
DVR Web Client
DVR Web Backup
DVR Web Backup player
My DVR List
* Click Web-Viewer icon on the right side of ACT to operate Web-Viewer.
* You should add www.j2kip.com on Trusted Sites(Tools -> Internet Options -> Security) at first webviewer installation.
* : Webviewer : Webbackup : Dvr Edit : Dvr Delet
DVR Name
Confirm
DVR Add
No
Name
MAC
IP:Port
Last Modified
Act
No Data

3) Please click confirm after inputting DVR information (DVR Name and MAC Address only). Then, Click “confirm” button.



4) Now, DVR is listed on DDNS web server without IP and Port number.

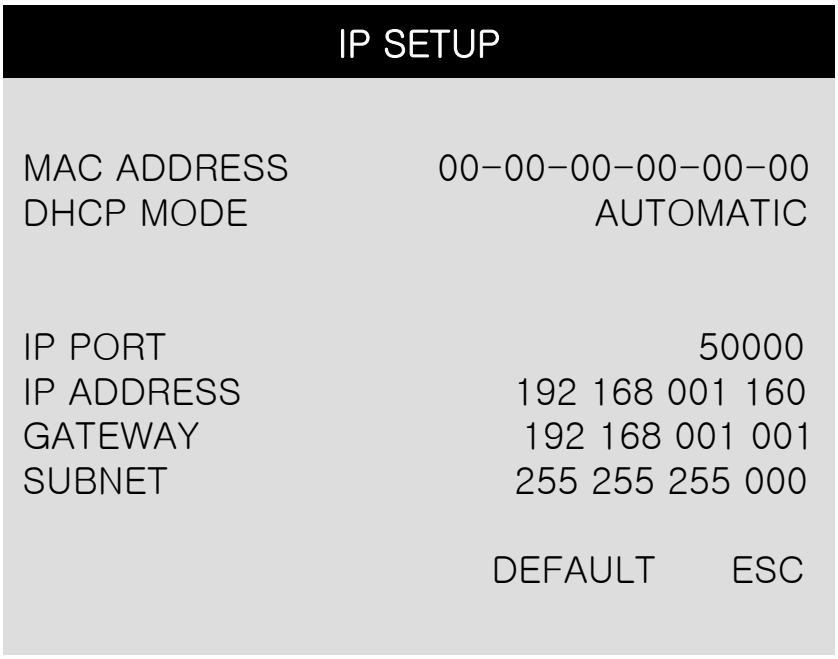

DDNS service
DYNAMIC DOMAIN NAME SYSTEM
[Home] [Logout] [Member Edit]
DDNS Services for DVR Systems
This website was created to provide a dynamic domain name system (DDNS) that allows DVR Systems to operate without a static IP from an Internet provider. This has been created exclusively for use with the line of products. Complete the registration process to add your DVR to the system and enjoy the many benefits of DDNS.
Welcome jason
DYNAMIC DOMAIN NAME SYSTEM
Member
Member Register
My Dvr List
My DVR Register
DVR Web Client
DVR Web Backup
DVR Web Backup player
My DVR List
* Click Web-Viewer icon on the right side of ACT to operate Web-Viewer.
* You should add www.j2kip.com on Trusted Sites(Tools -> Internet Options -> Security) at first webviewer installation.
* : Webviewer : Webbackup : Dvr Edit : Dvr Delet
DVR Name
Confirm
DVR Add
No
Name
MAC
IP:Port
Last Modified
Act
1
superman
00-0A-A2-00-F0-0C
2006-01-09 ¿ÀÈÄ 3:23:57
1

7-2. DDNS set up in DVR

* The following setting is a sample for a cable modem connected to DVR directly.

1) Go to Menu

2) Go to IP SETUP menu, if you set DHCP AUTOMATIC then, it detects IP address automatically.



3) Go to the previous menu and click DDNS SETUP.

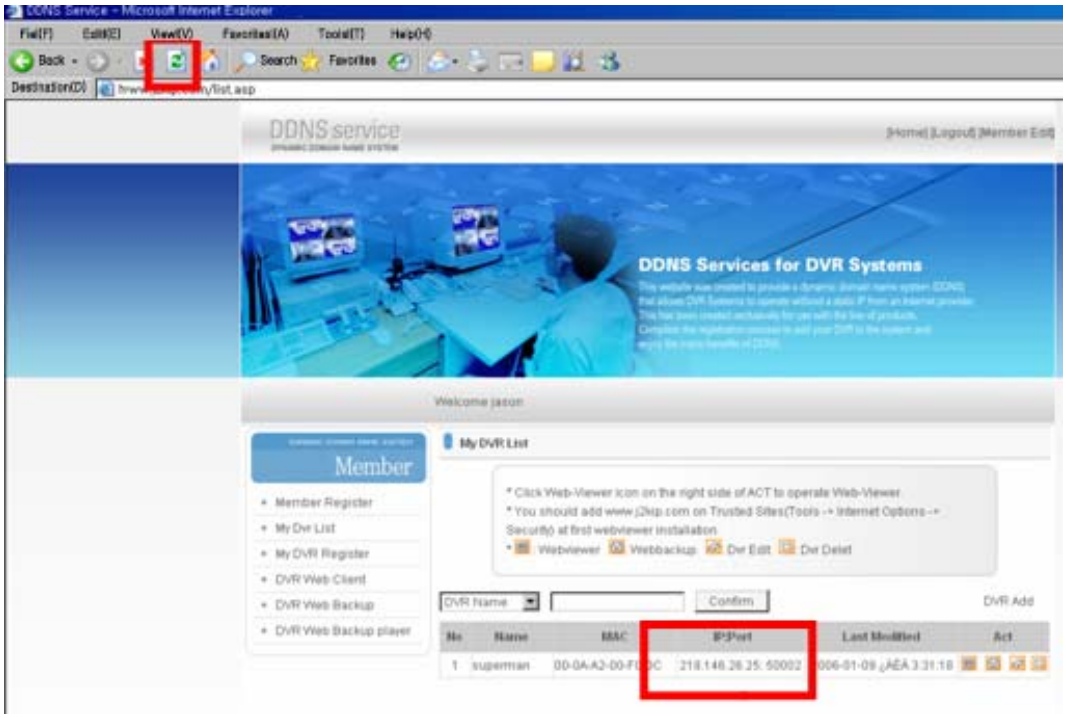
4) Set DDNS ON/OFF 'ON'.
IP address which is assigned from DHCP server is automatically input on DNS SERVER.

DDNS SETUP	
DDNS ENABLE	ON
DNS SERVER	192.168.063.001
INTERVAL	D-00 H-00 N-20
	REGISTER
DDNS STATUS	REGISTER OK
IP ADDRESS	192.168.001.160
IP PORT	50000
REMAIN TIME	D-00 H-00 N-20
LAST REGISTRATION DATE	
> WED. 12 JUL 2006 09 : 21 : 36	GMT
DEFAULT	ESC

5) Go down to REGISTER and push ENTER button to renew IP registered on DDNS SERVER.
(Interval : connection interval time between DVR and DDNS SERVER)
D = Day, H = Hour, M = Minute

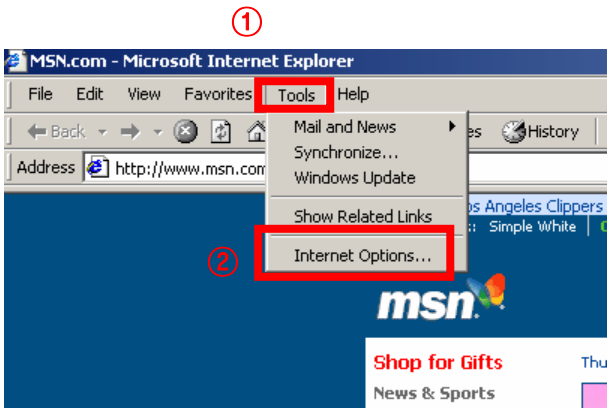
DDNS SETUP	
DDNS ENABLE	ON
DNS SERVER	192.168.063.001
INTERVAL	D-00 H-00 N-20
	REGISTER
DDNS STATUS	REGISTER OK
IP ADDRESS	192.168.001.160
IP PORT	50000
REMAIN TIME	D-00 H-00 N-20
LAST REGISTRATION DATE	
> WED. 12 JUL 2006 09 : 21 : 36	GMT
SUCCESS TO REGISTER DVR INFO	
DEFAULT	ESC

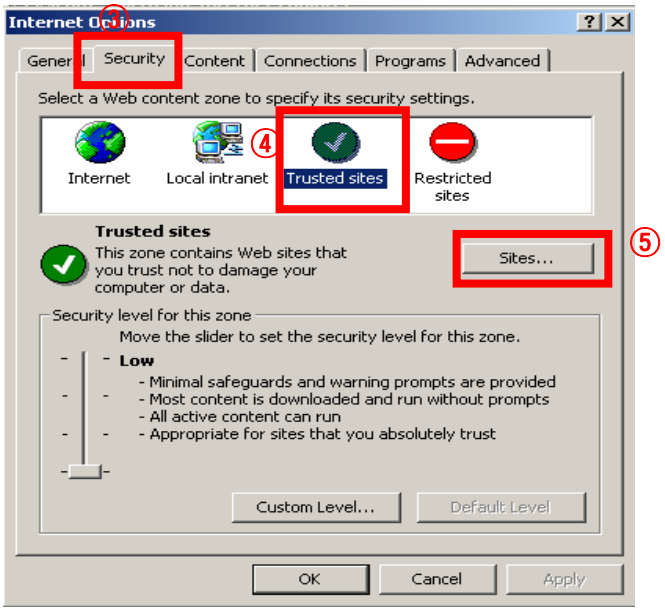
6) Go to your computer again after you see “SUCCESS TO REGISTER DVR INFO” and then Click ‘refresh’ button. Then, DDNS server automatically catches your DVR’s IP address and Port number.

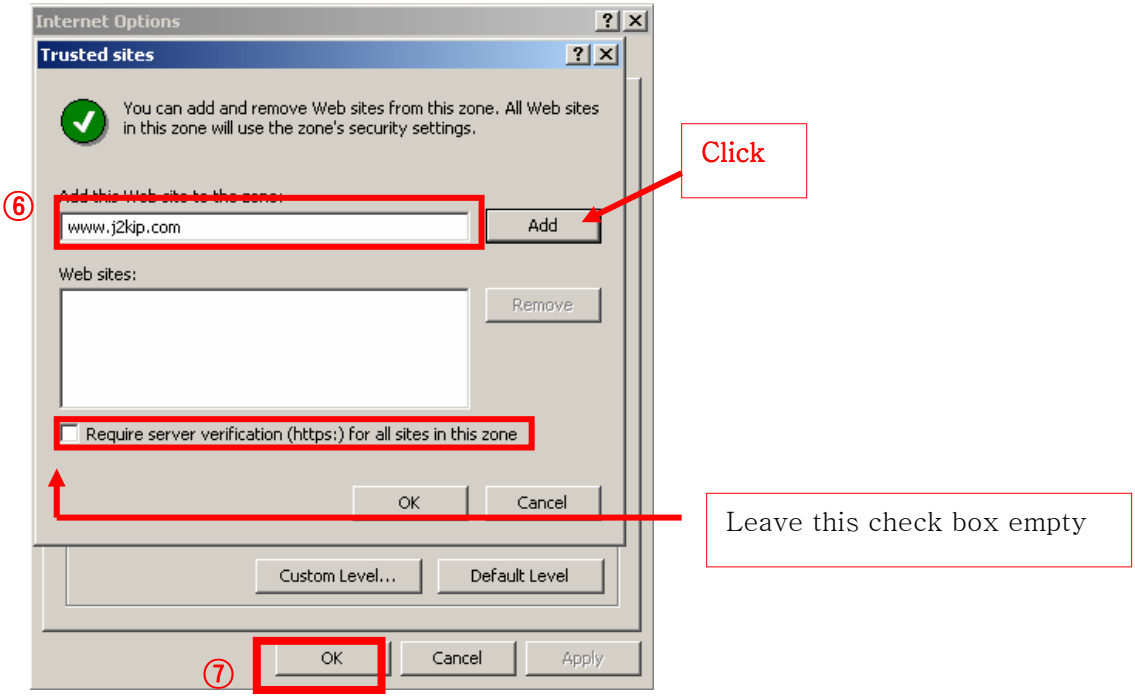


Note.

Before using Web-Viewer, please add www.j2kip.com on Trusted Sites at first installation as follows. (Tools -> Internet Options -> Security)




Internet Options
Security
Content
Connections
Programs
Advanced
Select a Web content zone to specify its security settings.
Internet
Local intranet
Trusted sites
Restricted sites
④
Trusted sites
This zone contains Web sites that you trust not to damage your computer or data.
Sites...
⑤
Security level for this zone
Move the slider to set the security level for this zone.
Low
- Minimal safeguards and warning prompts are provided
- Most content is downloaded and run without prompts
- All active content can run
- Appropriate for sites that you absolutely trust
Custom Level...
Default Level
OK
Cancel
Apply

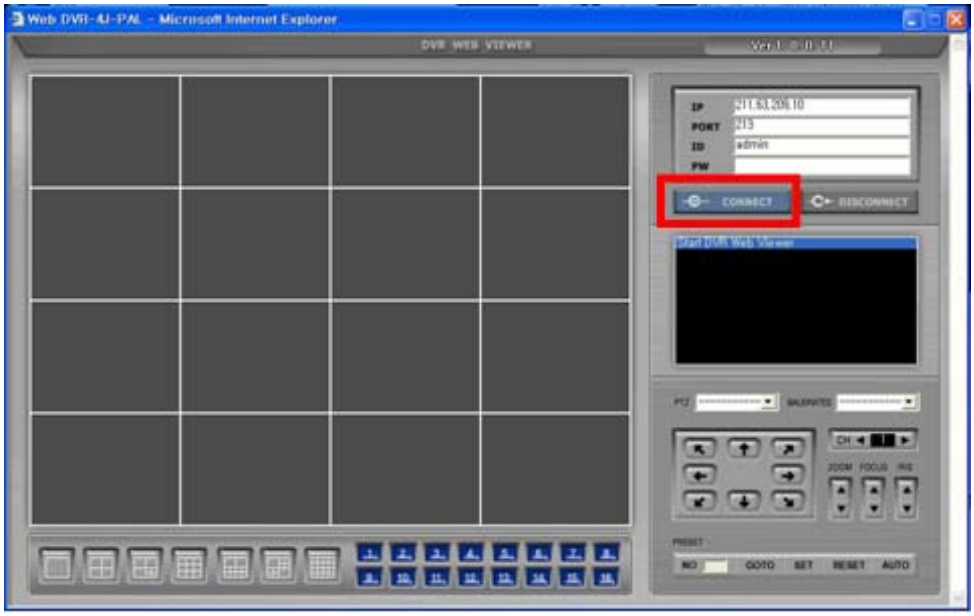

Internet Options
Trusted sites
You can add and remove Web sites from this zone. All Web sites in this zone will use the zone's security settings.
⑥
www.j2kip.com
Add
Click
Web sites:
Remove
Require server verification (https:) for all sites in this zone
OK
Cancel
Leave this check box empty
Custom Level...
Default Level
⑦
OK
Cancel
Apply

7-3. Web Viewer

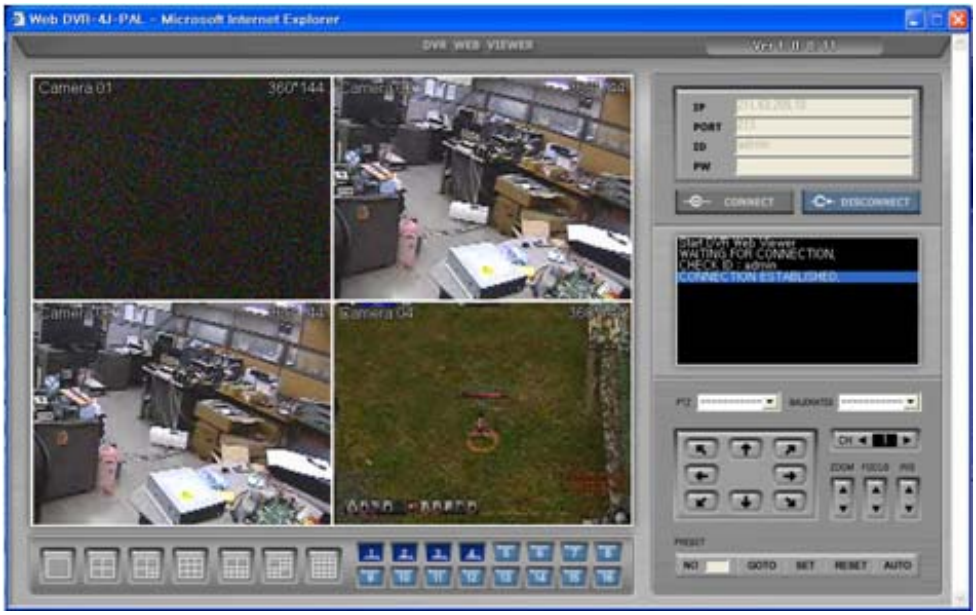
1) Please click the following icon to execute Web-Viewer.

*If ActiveX control installation is required for the first time access, please click 'Yes'.

2) The following Web-Viewer will pop up. Press 'connect' button to see the Live image.



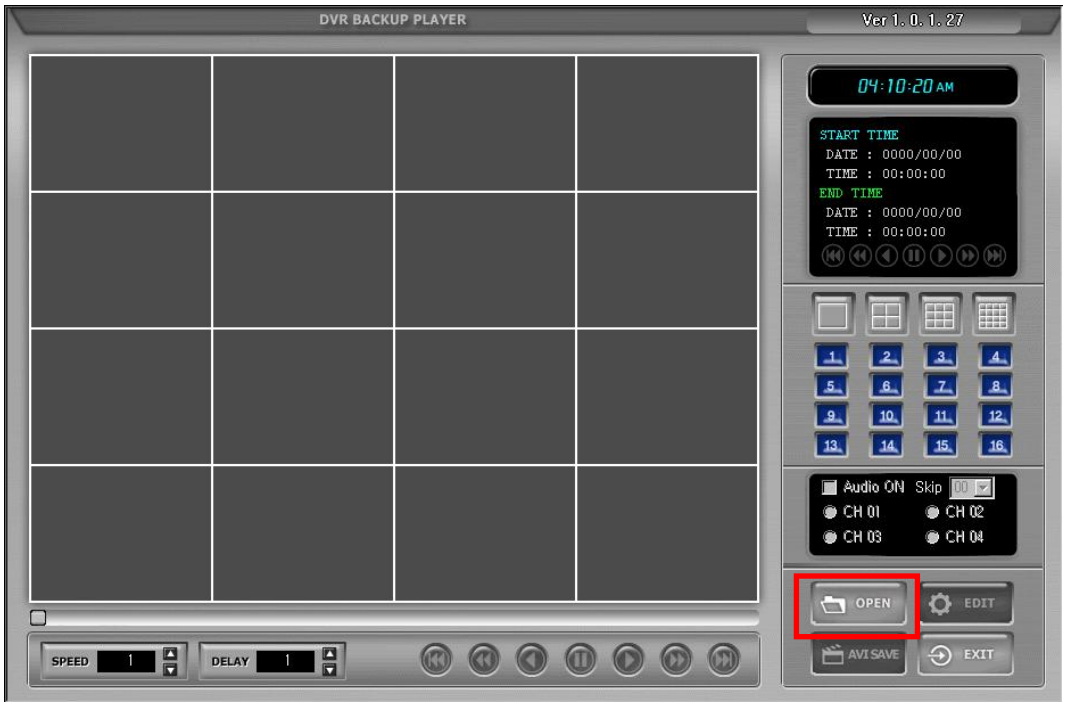
3) You can see the Live image as shown below.



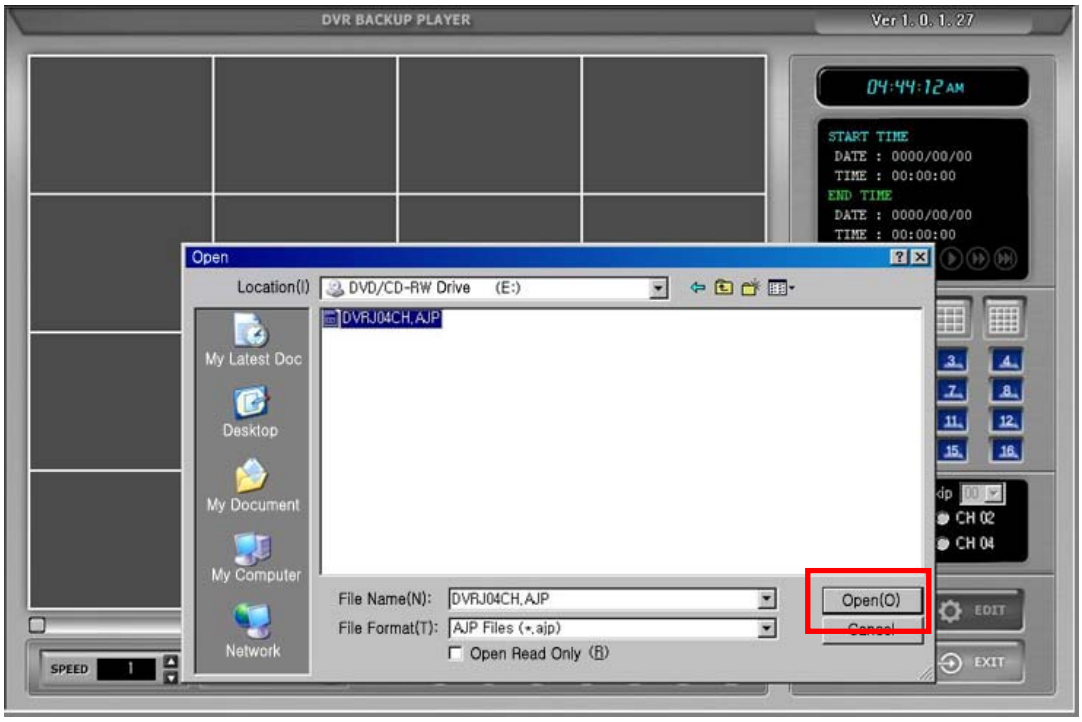
7-4. Web Backup Player

1) To execute Web Backup Player, click web viewer icon on the right.
* *If ActiveX control installation is reqired for the first time access, please click 'Yes'.

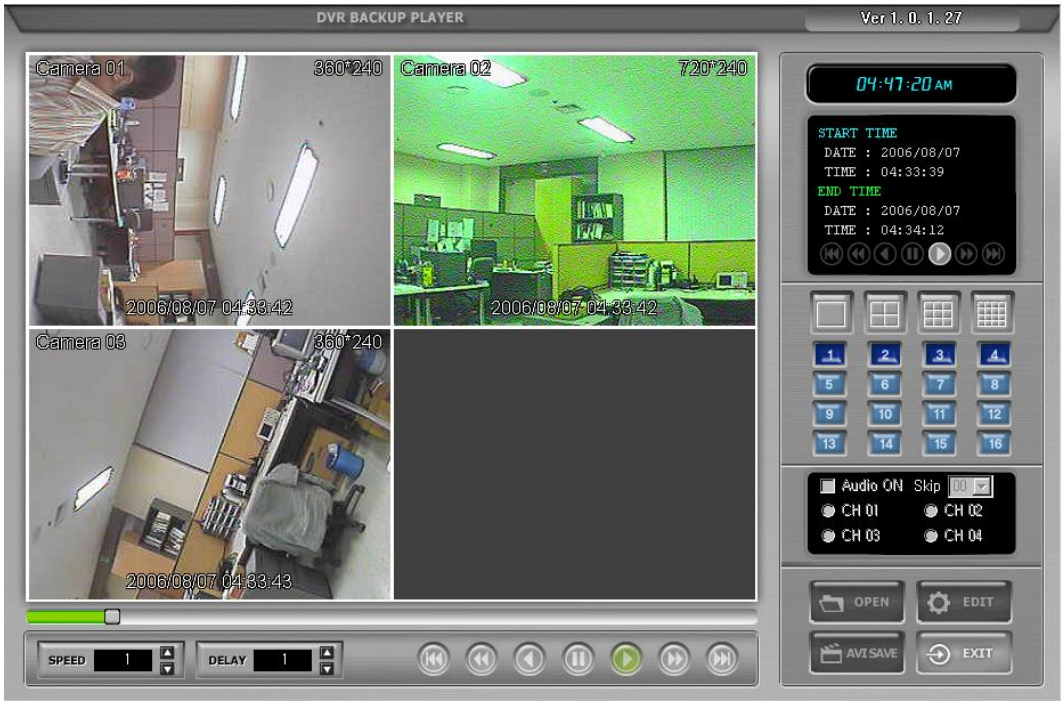
2) The following Web-Viewer will pop up. Press 'open' button to open the backup image file.



3) Choose one backup data file and click 'open' button on window.

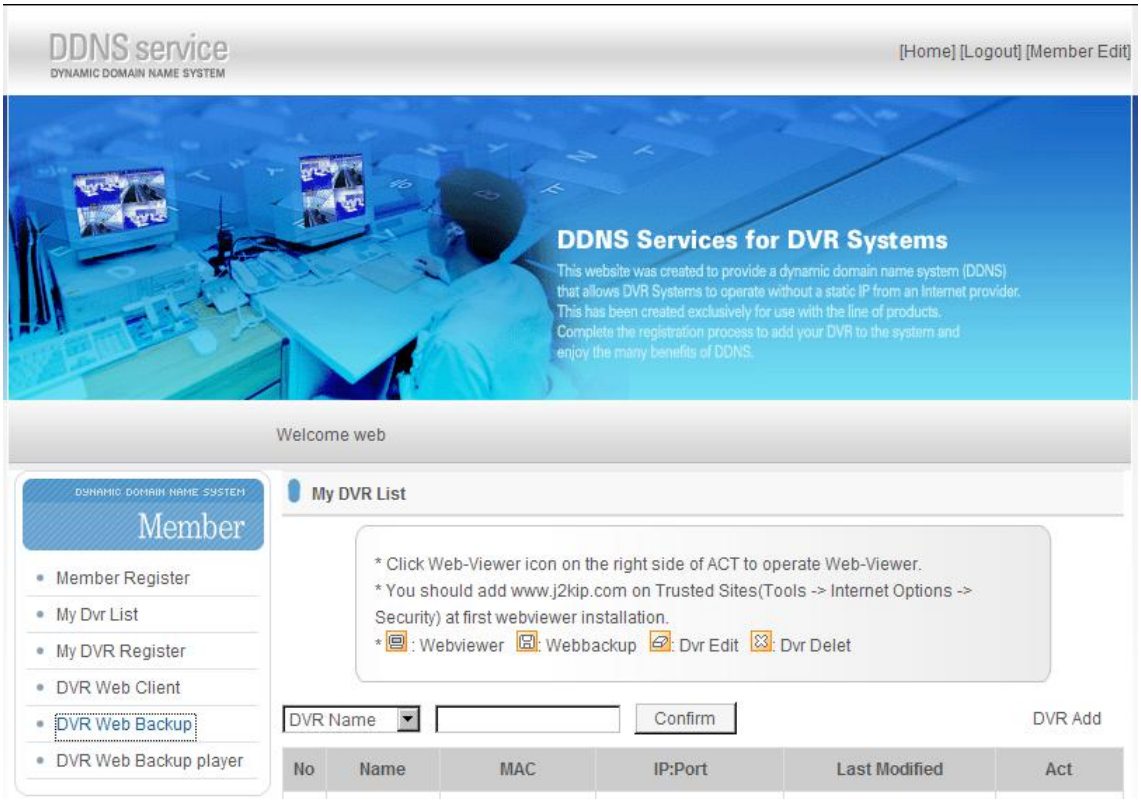


4) You can see Backup images shown as below.

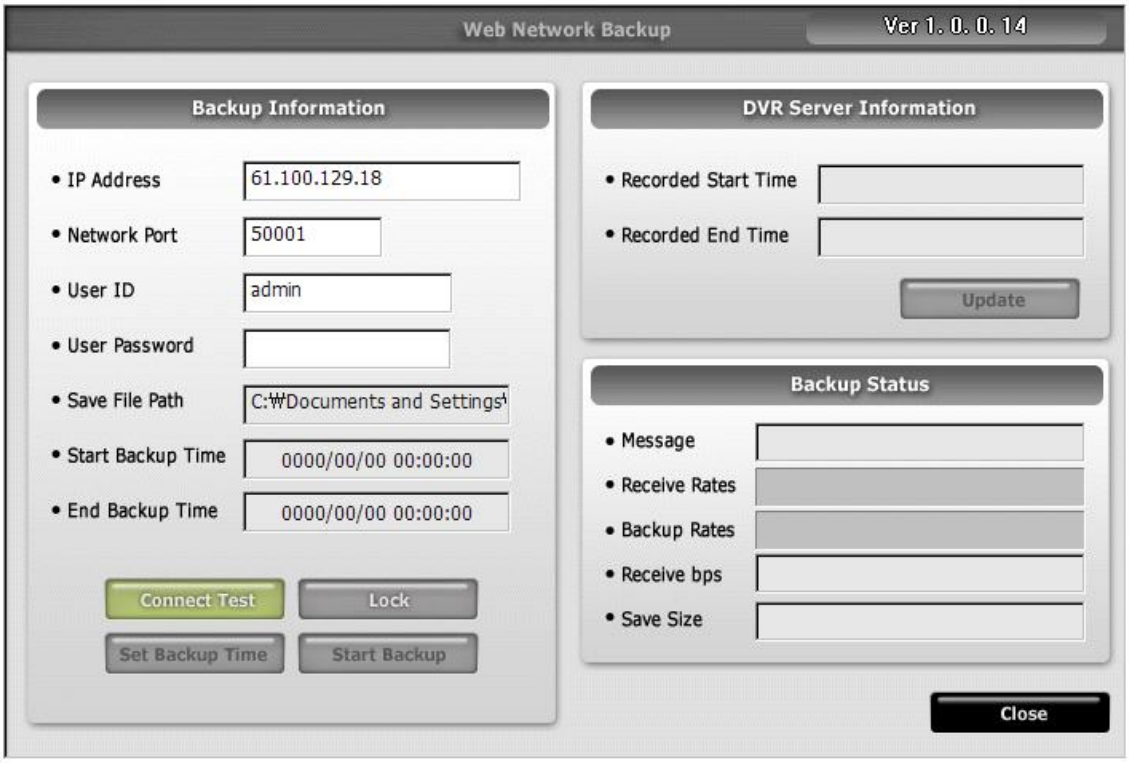


7-5. Web Backup

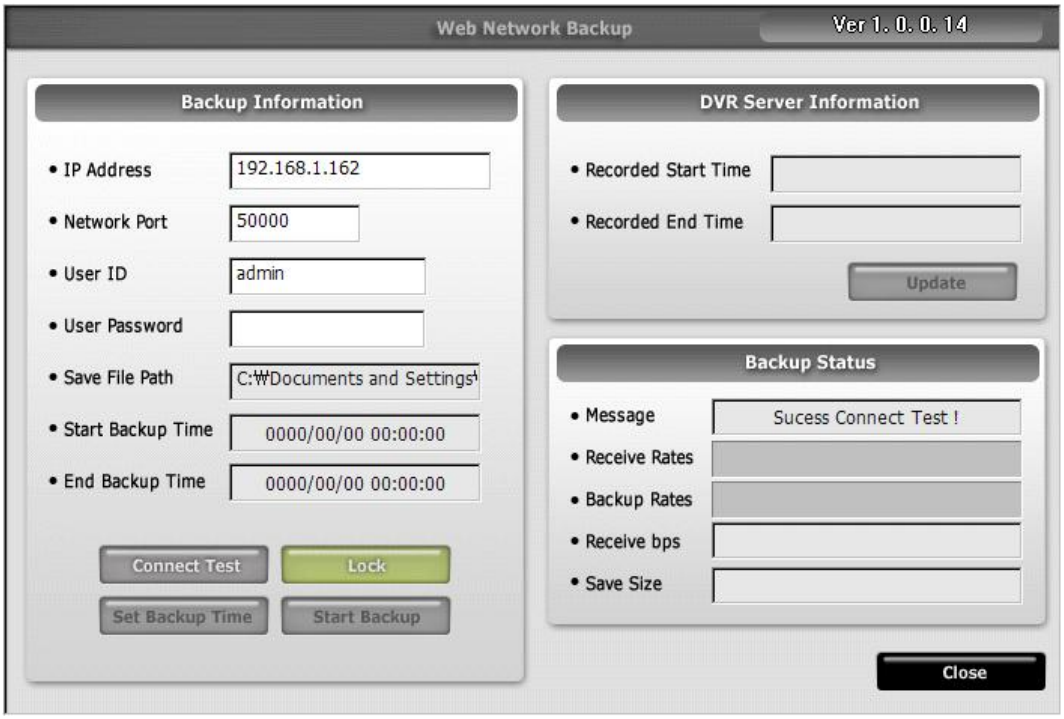
1) Log on to www.j2kip.com first and then, click 'DVR Web Backup' icon on the left.


DDNS service
DYNAMIC DOMAIN NAME SYSTEM
[Home] [Logout] [Member Edit]
DDNS Services for DVR Systems
This website was created to provide a dynamic domain name system (DDNS) that allows DVR Systems to operate without a static IP from an Internet provider. This has been created exclusively for use with the line of products. Complete the registration process to add your DVR to the system and enjoy the many benefits of DDNS.
Welcome web
DYNAMIC DOMAIN NAME SYSTEM
Member
Member Register
My Dvr List
My DVR Register
DVR Web Client
DVR Web Backup
DVR Web Backup player
My DVR List
* Click Web-Viewer icon on the right side of ACT to operate Web-Viewer.
* You should add www.j2kip.com on Trusted Sites(Tools -> Internet Options -> Security) at first webviewer installation.
* : Webviewer : Webbackup : Dvr Edit : Dvr Delet
DVR Name
Confirm
DVR Add
No
Name
MAC
IP:Port
Last Modified
Act

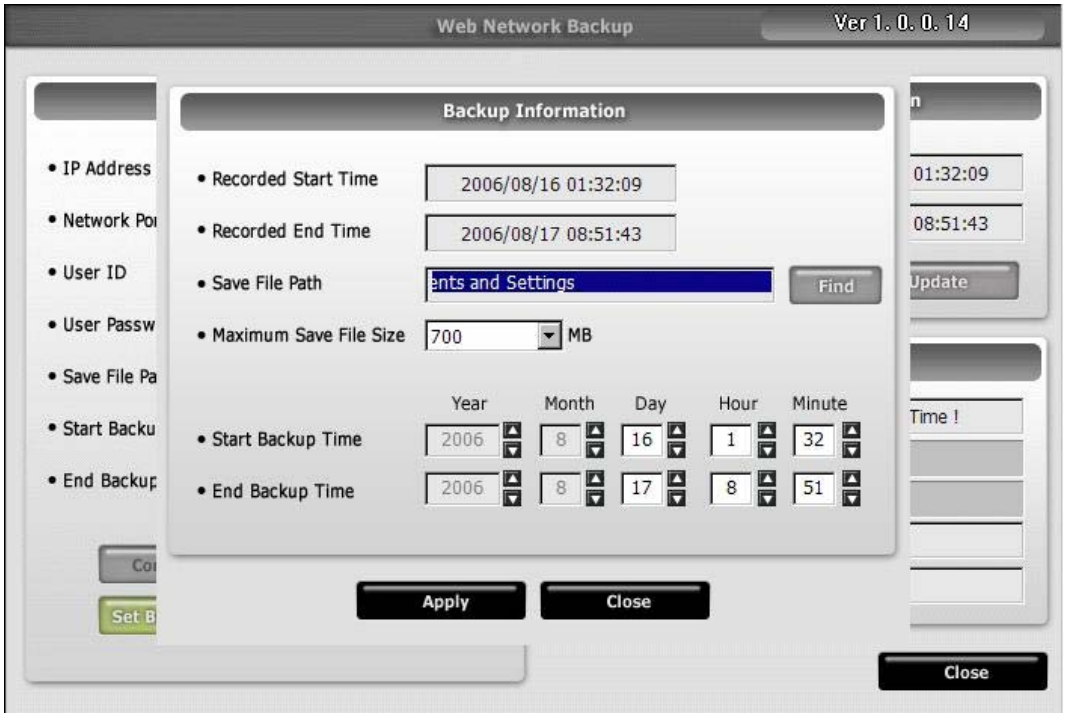
2) To execute BACKUP, input IP Address & Port and click 'Connect Test' button.



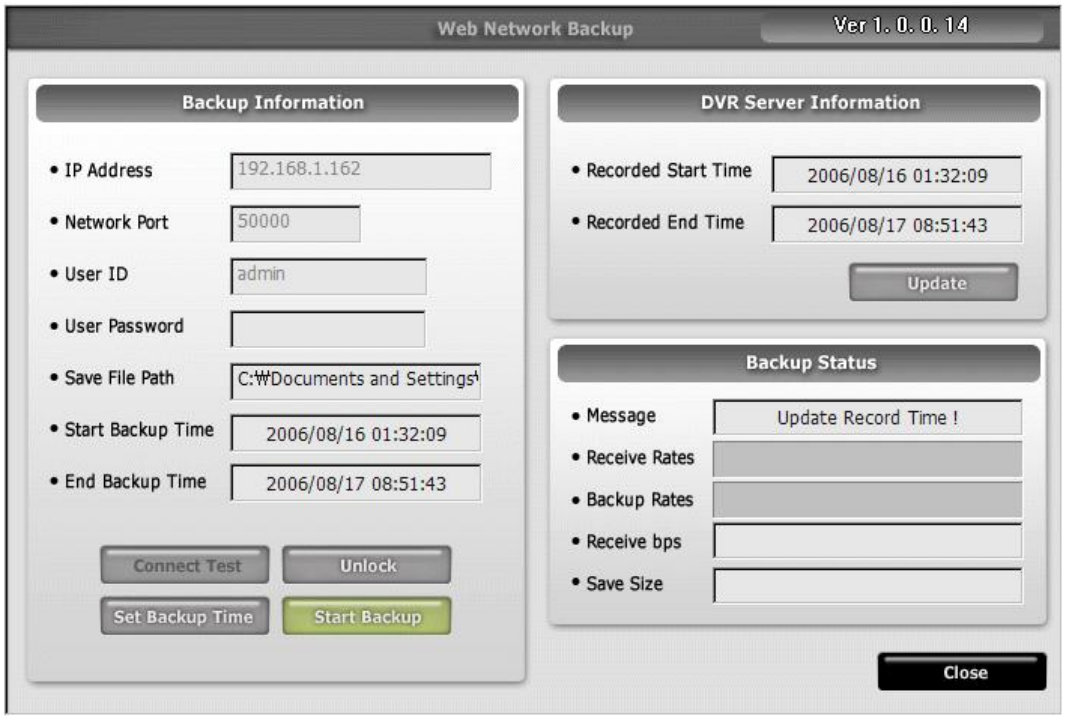
3) After Connect Test is done, you can see 'Success Connect Test!' message. Then, click 'lock' button and click 'Set Backup Time' button.



4) Now you set 'Start Time', 'End Time', 'Save File Path', 'File Size' and click 'Apply'.



5) After finishing time setting, click 'Start Backup' to start backup. Then, you can see the backup file on the path that you chose.



7-6. Frequently Asked Questions

F A Q

How do I determine my PC's TCP/IP settings?

For Window 98 / Me Users
1. Click on the Start Menu, select RUN
2. Type 'winipcfg' (without the quotes), hit Enter
3. Use the drop down list to select your 10/100 Fast Ethernet Adapter(not the PPP adapter)
4. Now you will see your IP Address, Subnet Mask, and Default Gateway information

For Window 2000 / XP
1. Click on the Start Menu, select RUN
2. Type 'cmd' (without the quotes), hit Enter
3. The command prompt will appear. At the prompt type – "ipconfig"(without the quotes)
4. This will list your current IP address, subnet mask, and default gateway.

How do I choose a unique IP that matches my network?

For your home or small office, ensure that all devices on your network are running. Chose an IP address that you wish to assign the DVR. To ensure the IP address that you will assign the DVR matches your network, review the "PC's TCP/IP settings" that you had recorded earlier. See some examples below."

- If your "IP Address" entry in "PC's TCP/IP Settings" was 192.168.0.y and your "Subnet Mask" was 255.255.255.0 then use 192.168.0.x for your DVR's IP Address ("x" meaning any number between 2-254 that you wish, as long as it passes the "PING" test).

- If your "IP Address" entry in " PC's TCP/IP Settings" was 192.168.1.y and your "Subnet Mask" was 255.255.255.0 then use 192.168.1.x for your DVR's IP Address ("x" meaning any number between 2-254 that you wish, as long as it passes the "PING" test).

After choosing an appropriate IP address, 'PING' the IP address that you plan to assign to the DVR. If you receive a "Request timed out", then you may use that IP address (the PING test has passed).

* If your "IP Address" entry under "PC's TCP/IP Settings" is not a 192.168.z.y address with a "Subnet Mask" of 255.255.255.0 then please contact our Support Center.

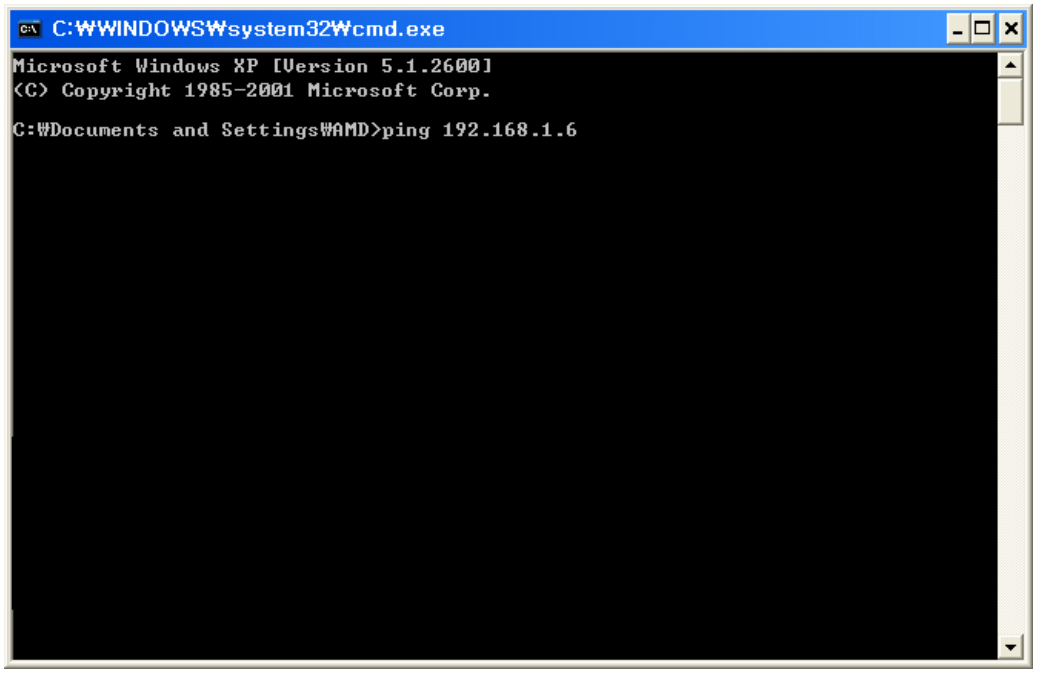
** If your "IP Address" entry under "PC's TCP/IP Settings" is not a 192.168.z.y address, please contact our Support Center.

How do I "PING" an IP address ?

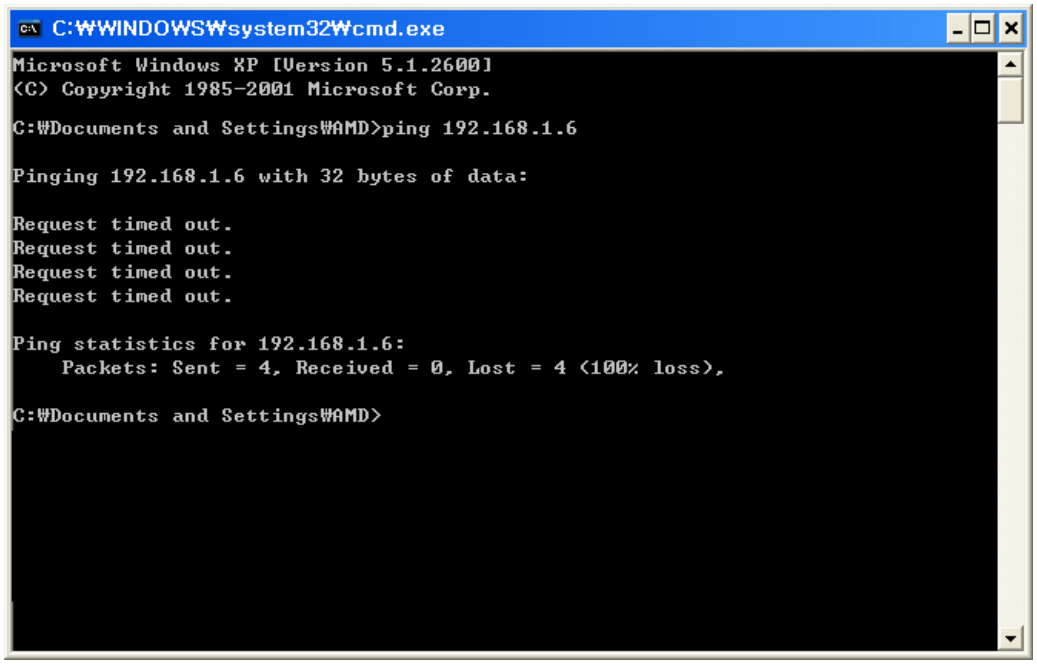
1. Open an MS-DOS (or Command) prompt.
2. At the prompt type – "ping xxx.xxx.xxx.xxx" (without the quotes and replace the x's with an IP address)
3. Press Enter

How do I " PING" an IP address ?

1. Open an MS-DOS (or Command) prompt
2. At the prompt type – "ping xxx.xxx.xxx.xxx" (without the quotes and replace the x's with an IP address)
3. Press Enter



Ping Result. When testing for a usable IP address, verify that you get a "Request timed out" message. This ensures that the IP address that you have tested is not being used by another device on your network.


C:₩WINDOWS₩system32₩cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
C:₩Documents and Settings₩AMD>ping 192.168.1.6
Pinging 192.168.1.6 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.1.6:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:₩Documents and Settings₩AMD>

How do I open an MS-DOS or Command Prompt ?

Windows 98/Me : Start -> Programs -> Accessories -> MS-DOS prompt
Windows 2000/XP : Start -> (All) Programs -> Accessories -> Command Prompt

How do I choose a private IP address : Below lists the ranges for private addresses.

Private Class A address space : 10.0.0.0 – 10.255.255.255
Private Class B address space : 172.16.0.0 – 172.31.255.255
Private Class C address space : 192.168.0.0 – 192.168.255.255

For most cases you will choose a private IP address that falls in the Class C address space. (ex. 192.168.1.x or 192.168.0.x)

How do I forward a port in my router?

For cases A&C you must forward a TCP port through your router. This port is the Port Number specified in the DVR. For most cases you should be able to leave the default at 50000.

Every router has a different procedure for forwarding ports. Please consult your router's user guide on how to correctly configure Port Forwarding.

Can I configure my DVMR for remote access using a Dial-Up connection?

Yes, it is possible, but not recommended. With a live video feed, the bandwidth that a dial-up connection provides is very poor. In addition, you will have to install a device that allows your DVR to connect directly to your dial-up phone line (roughly $200).

Why is my remote video jerky?

The frame rates received via the Internet are all dependent on your connection condition and speed at both the DVR site and the location from where you are accessing the DVR. The fastest frame rates are achieved locally.

Important Notes Regarding the Remote Viewer and the DVR

When you are in SCAN MODE and are playing back data, you are actually accessing the DVR remotely and placing the unit itself in playback mode, which enables DVR to record the images.

When selecting a date/time to play back. First, ensure that the stop button has been pressed (screen should have no images displayed). Next, select the date you wish to view and verify that it is a valid date on the hard drive and that the selected data is outlined with the box filled in. Then, select the time you wish to access for that particular date. Finally, hit the single-arrow play or double-arrow play button.

To see continuous live view, we recommend NOT setting the DVR for motion detection. The remote viewer only sends images when there is motion and this motion is not fluid. The remote SCAN MODE option still operates as normal. We recommend only using the remote playback feature if you set the DVR for Continuous Record.

The DVR still records images in the remote scan mode, but recording rates drop by a small amount. Therefore, we recommend remote access to DVR for Scan when needed.

The remote viewer is only compatible with Windows operating systems.

If the connection is lost during remote playback, exit SCAN MODE, reconnect to the live view, then re-enter SCAN MODE.

CHAP. 8 Specifications

8-1. Specification of DVR

- MJPEG Compression Algorithm
- Real time live display in all channels
- Triplex (Playback/Recording/Ethernet)
- Web monitoring and download through network
- Easy control by Mouse
- USB (Device) port for firmware upgrade
- Easy PTZ Camera (MOUSE)
- Password protection
- Web control

Multiplex function			Triplex (Playback/Recording/Ethernet)
Storage	Internal	HDD	1 HDD with no limitation in capacity
Capacity		USB PORT	For Backup
Video	Inputs	Composite	4Ch
	Outputs	Composite	2Ch (Monitor / SPOT)
	Compression		MJPEG
	Compression Rate		LOWEST
	(Image size fixed)		LOW
			NORMAL
			HIGH
			HIGHEST
	Display Speed		Real Time display
Recording	Recording Mode		Time, Motion, schedule, Alarm
/Search	Search		Event Search, Date/time Search, Percent Search
	Recording Speed (NTSC/PAL)		Max. 120IPS(NTSC) 100IPS(PAL)
	Recording Resolution (NTSC/PAL)		Half D1 (704x240/704x288), CIF (352x240/352x288)
Switching Interval			1~99 sec selectable
Live Division Screen			1 / 4 Split
			Digital Zoom, PIP in live mode
Alarm	Inputs		4 Alarms (NO/NC selectable)
	Outputs		1 (NO/NC)
	Post Alarm		Alarm output duration : 1 ~ 99 Sec selectable
Network			Ethernet (TCP/IP), Web viewer included
Backup			USB Back up, Download via IP Network
PTZ Control			RS-485, Key Control (Key assigned for each PTZ command), MOUSE
Firmware upgrade			USB Port for firmware upgrade
Serial I/F		RS-485	For PTZ camera control
		RS-232C	For operation using keyboard of PC
Power Requirements			DC 12V 4.16A Adaptor

Design and specifications are subjected to changes without notice

8-2. Specification of Monitor

- 15” diagonal active-matrix TFT LCD
- High brightness and contrast ratio
- Digital signal (ITU-656 / 8bit) input
- Using the deinterace chipset
- 3S design (Simple / Smart / Slim)
- Dual setting (Wall mountable and Table setting)
- Easy operating

Display type			15” Diagonal Active-matrix TFT LCD
	Brightnessl		250cd/m2 (Typical)
	Contrast Ratio		450:1
	Respons time		12ms
	Pixel pitch		0.297mm(H) x 0.297mm(V)
	Resolution		1024 x 768 @60Hz (XGA)
	Freauency	Horizontal	30KHz ~ 60KHz
		Vertical	56Hz ~ 75Hz
	Active display area		304mm x 228mm
Feature	Design concept		3S (Simple / Smart / Slim)
	Dual setting		Wall mountable & Table setting
	All In One		DVR system + Monitor
	Deinterace chipset		High quality of display
Gross Weight (kg)			8.3kg
Dimensions (WXHXD) mm			356.4 X 329.7 X 68.5
Packing (mm)			453 X 463 X 185

Design and specifications are subjected to changes without notice

MEMO :

Best Picture Quality - JPEG2000